

**Tillbridge Solar Project
EN010142**

**Volume 6
Environmental Statement
Appendix 9-6: Baseline Report for Reptiles and amphibians
(excluding Great Crested Newt)
Document Reference: EN010142/APP/6.2**

**Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009**

**April 2024
Revision Number: 00**

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Executive Summary

- ES-1. Field surveys were undertaken within the Order limits of the Scheme in order to establish which, if any, species of reptiles are to be found within this area and, if so, where they occur and what size of population. Similarly, these surveys were used to inform on the presence and distribution of amphibians, with emphasis on Common Toad, a Priority Species.
- ES-2. The surveys were supported by a desk study of existing records for the Order limits and surrounding area. Furthermore, as set out in **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1], the Scheme has worked collaboratively with Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. Therefore, wider ecological survey data for these schemes was reviewed as part of the desk study and informed the assessment of reptile and amphibian presence in the wider landscape.
- ES-3. The Order limits were 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. Given that the majority of the land within the Order limits is arable agriculture (minimum 80%), the area of potentially suitable habitat identified for survey was relatively small (<10 ha) and this area of suitable habitat was divided into six Survey Areas. Reptile refugia sheets, as well as direct field observations, were used to determine presence of reptiles and Common Toad in these survey areas and to provide data from which the size of species population could be determined.
- ES-4. The desk study returned no records of any reptiles or of Common Toad from the Order limits, but the collaborative datasets identified the presence of Common Lizard and potentially Grass Snake within the Cable Route Corridor. The data search identified a single record of Common Lizard, two records of Grass Snake and three records of Common Toad from outside of the Order limits, but within 2km (the Study Area). Field surveys, undertaken between April and June 2023, did not detect the presence of any reptile species within the Principal Site but Common Toads were recorded in two of the six Survey Areas.
- ES-5. The overall conclusion is that reptiles are absent from the Order limits or occur at such low densities that detection is difficult, but a low population of two species (Common Lizard and Grass Snake) does occur in a restricted area within the Cable Route Corridor. There was a low population of Common Toad within the Order limits which was restricted to two discrete areas of habitat within the Principal Site.

1. Introduction

1.1 Background

- 1.1.1 This report forms a technical appendix to the Environmental Statement (ES) [EN010142/APP/6.1], specifically to accompany **Chapter 9: Ecology and Nature Conservation** of this ES [EN010142/APP/6.1]. The report provides information on the presence and distribution of reptiles and amphibians (excluding Great Crested Newt *Triturus cristatus*) relevant to the Tillbridge Solar project, hereafter referred to as the Scheme, including the results of surveys for reptiles and amphibians) undertaken within the Order limits.
- 1.1.2 Results of Great Crested Newt surveys are presented separately in **Appendix 9-5** of this ES [EN010142/APP/6.2].

1.2 Site Description

- 1.2.1 The Scheme is located approximately 5 kilometres (km) to the east of Gainsborough, Lincolnshire and approximately 13km to the north of Lincoln. The Scheme comprises two distinct parcels, which are:
- 'the Principal Site', which is the location where ground mounted solar PV panels, electrical sub-stations, and BESS will be installed; and
 - 'the Cable Route Corridor', which will comprise the underground electrical infrastructure required to connect the Principal Site to National Grid Cottam Substation.
- 1.2.2 The Principal Site (is located within the administrative district of West Lindsey. The Cable Route Corridor tracks south of the Principal Site, to the east of Willingham by Stow before tracking west towards the River Trent and to the south of Gate Burton. The Cable Route Corridor crosses into Nottinghamshire (within the administrative district of Bassetlaw) before connecting to the Cottam Power Station.
- 1.2.1 This report is based on the administrative county of Lincolnshire whilst recognising that key aspects of biodiversity are coordinated and managed within the geography of Greater Lincolnshire, for example the Nature Strategy for the Greater Lincolnshire Nature Partnership.
- 1.2.2 The Order limits covers an area of approximately 1,670 hectares (ha) and is dominated by arable fields (minimum 80% of the Order limits). There are numerous mature trees and hedges within the Order limits, with woodlands and small wooded copses. It is surrounded by mainly arable and improved grassland livestock fields.
- 1.2.3 The location of the Scheme is presented in **Figure 9-6-1**, included in **Appendix A** of this survey report.

1.3 Aims and Objectives

- 1.3.1 The aim of this report is to determine the presence and distribution of reptiles and amphibians (referred to as herpetofauna in this report, hereafter), within the Order limits.

1.3.2 The objectives, therefore, are to:

- a. review existing ecological data to identify any records of herpetofauna within the Study Area; and
- b. identify the presence of herpetofauna within the Order limits.

1.3.3 Combined, this is being used to:

- a. determine the nature conservation value of the Order limits for herpetofauna; and
- b. the potential impacts of the Scheme on herpetofauna and any required mitigation.

2. Relevant Legislation, Policy and Guidance

2.1 Legislation

- 2.1.1 The four reptile species that could be found within or in the vicinity of the Scheme (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 four species are experiencing declines and contractions in their range both nationally and locally (Ref 1)). All four species are afforded partial protection under the Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 2), which makes it an offence to intentionally kill or injure a reptile and also to sell, offer or expose for sale such species.
- 2.1.2 Therefore, in accordance with the WCA, care must be taken to ensure that reptiles are not killed or injured as a result of the Scheme. Additionally, Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* are both fully protected under the Conservation of Habitats and Species Regulations 2017 (Ref 3). 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 UK.
- 2.1.3 Three species of amphibian, Great Crested Newt, Pool Frog *Pelophylax lessonae* and Natterjack Toad *Epidalea calamita* are also protected under the WCA (Ref 2) and the Conservation of Habitats and Species Regulations 2017 (Ref 3) from intentional killing and injury, which also extends to protection of their habitats (including ponds and key foraging areas). With the exception of Great Crested Newt (which is reported on separately, see **Appendix 9-5** of this ES [EN010142/APP/6.3]), neither Pool Frog or Natterjack Toad have been, or are likely to be recorded in or near to the Order limits, due to their restricted range in the UK.
- 2.1.4 There are no licensing provisions within the WCA (Ref 2) for development activities affecting reptiles and other amphibians. However, developers are expected to take adequate precautions to avoid breaches of the legislation, including undertaking adequate surveys, using suitably qualified ecologists and adopting appropriate mitigation to avoid or minimise the risk of killing or injuring reptiles.

2.2 Priority Species

- 2.2.1 In addition to the above legislation, five species of herpetofauna (Common Lizard, Grass Snake, Slow Worm, Adder and Common Toad) 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 4). These species are of material consideration during the planning process.
- 2.2.2 The NERC list of Species of Principal Importance (Ref 4) 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 (UKBAP) (Ref 5) 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 6), 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 counties of Lincolnshire and Nottinghamshire. Formerly, the Lincolnshire Biodiversity Action Plan (3rd edition) (Lincolnshire BAP) (Ref 7) 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 Lincolnshire. However, under the Environment Act 2021 (Ref 8), these are being replaced by Local Nature Recovery Strategies (LNRSs), 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 Lincolnshire and with no specific habitat or species plans currently in place, this report references the Lincolnshire BAP, for which Common Lizard, Grass Snake, Slow Worm, Adder and Common Toad are all listed, but with no specific action plans in place (Ref 7).
- 2.3.2 The Nottinghamshire Biodiversity Action Plan (Nottinghamshire BAP) (Ref 9) continues to provide context to inform identification of threatened or uncommon species of local relevance and identifies priorities for conservation and enhancement and are a mechanism for enabling national targets at a local level. However, it confers no particular legislative or policy protection to the species identified, although in some cases this is provided through related legislation and local planning policy.
- 2.3.3 Slow Worm are listed as a Priority Species in the Nottinghamshire BAP (Ref 9), but no amphibians are listed as Priority Species.

3. Methods

3.1 Characterising the baseline

3.1.1 Within this report, the following terminology is used when referring to the geographic areas within which assessments were made:

- a. Study Area – the area within the Order limits and a 2km radius which was subject to collection of background information e.g., desk study records for reptiles and amphibians to supplement the findings of the survey work;
- b. Zone of Influence (Zol) – the area over which herpetofauna may be affected by the Scheme which, using the criteria below and proportionate to the Scheme’s impacts, is likely to be no greater than 100m from the Order limits. Through review of likely impacts of the Scheme and results of the desk study, the scope of field surveys was then defined; and
- c. Survey Area – this is the area within which survey work was undertaken (the Principal Site).

3.1.2 The Zol is based on:

- a. the nature of the project (a solar farm scheme), project activities and the potential for effects at all development stages (construction, operation and decommissioning);
- b. the nature of the land use (minimum 80% arable) and habitats in the vicinity (majority being arable), their connectivity (e.g. through hedgerows, grassland margins) and how they may be used by reptiles and amphibians;
- c. the presence of reptiles and amphibians in the wider area, based on the location of the Order limits and desk study data; and
- d. the habits, behaviours and preferences of reptiles and amphibians and whether these could be affected both spatially and temporally.

3.2 Desk Study

3.2.1 A desk study was undertaken as part of the Preliminary Ecological Appraisal (PEA) in July 2022 (Ref 11). This desk study obtained records of reptiles and amphibians within the preceding ten years and within a 2km radius of the Order limits from Greater Lincolnshire Nature Partnership (GLNP) and Nottinghamshire Biological and Geological Records Centre (NBGRC).

3.2.2 Only records up to ten years old were considered within the assessment, as any records older than ten years are unlikely to still be representative of reptile or amphibian presence in the local area.

3.3 Collaborative Dataset

3.3.1 As set out in **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1], the Scheme has worked collaboratively with Gate

Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. As a result, a wealth of ecological information has been collected along this corridor. To minimise disturbance to wildlife and landowners, through repeated access by multiple schemes, where relevant, the Applicant has collaborated with the other proposed developments to 'share' data. Where this has been the case, it is clearly described in this report. In addition, the Applicant has undertaken surveys to ground truth these data, where relevant.

- 3.3.2 Wider ecological survey data for these schemes was reviewed as part of the desk study and informed the assessment of herpetofauna presence in the wider landscape (Gate Burton Energy Park (Ref 12); Cottam Solar Project (Ref 13); and West Burton Solar Project (Ref 14).

3.4 Field Survey

Habitat Suitability Assessment

- 3.4.1 A Habitat Suitability Assessment (HSA) was undertaken using desk-based data, which included a review of the Phase 1 map and aerial imagery, along with on-site verification, to determine the most likely habitats to support herpetofauna. This information was used to refine the Survey Area, which was defined using the following characteristics for assessing the potential suitability of habitat for herpetofauna:

- 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).

- 3.4.2 Using the Phase 1 map, aerial imagery and on-site verification, each broad habitat type or discrete area was graded (poor, good or exceptional) for its potential to support herpetofauna, based on the above characteristics and these, alongside a description of these definitions, are presented in **Table 1**.

Table 1. Habitat suitability assessment for herpetofauna

Habitat Grading	Description
Poor	Habitat that 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

Habitat Grading	Description
Good	Habitat that 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 that is favourable, based on most of the habitat assessment characters listed above

Survey Area

- 3.4.3 Using the HSA, the Survey Area that was subject to refugia surveys (see below) included any suitable terrestrial habitat, graded as good or exceptional, for herpetofauna within the Principal Site, examples of which included: ephemeral / short perennial vegetation, woodland edges (of tussocky grassland) and semi-improved grassland.
- 3.4.4 Six discrete areas, collectively referred to as the Survey Area, were identified within the Principal Site during the HSA as potentially representing 'good' terrestrial habitat for herpetofauna and were subject to further survey. There were no exceptional areas of habitat for herpetofauna anywhere within the Order limits and all remaining areas were considered of poor habitat value and excluded from further survey.
- 3.4.5 The locations of each Survey Area are presented in **Figure 9-6-1**, see **Appendix A**.

Determining presence / absence

- 3.4.6 The field surveys utilised the following survey methods to record the presence or absence of herpetofauna:
- aquatic habitat surveys - visual observations of amphibians in water bodies, including tadpoles, or spawn;
 - terrestrial habitat surveys - refugia surveys within the Survey Area (see from Section 3.4.8); and
 - visual observation of banks and, or other, suitable terrestrial habitat within the Order limits.

Aquatic habitat surveys

- 3.4.7 Within aquatic habitats, any observations of amphibians were made alongside undertaking surveys for Great Crested Newt (see **Appendix 9-5** of this ES [EN010142/APP/6.2]) between March and June 2022 and April and June 2023, by suitably experienced AECOM ecologists. Surveys took place from the edge of any surveyed water body, without entering the water and involved walking steadily along the edge of the water body to make observations and recordings of any amphibians in the water or signs of amphibian presence, such as tadpoles, eggs or spawn.

Terrestrial habitat surveys

- 3.4.8 Surveys of terrestrial habitats within the Principal Site, identified using the HSA (see Section 3.4.1) were undertaken between 4th April and 5th June 2023, by suitably experienced AECOM ecologists. All surveys were undertaken using artificial refugia and in accordance with Froglife’s Advice Sheet 10 for Reptile Surveys (Ref 15) and Natural England’s Standing Advice Sheet for Reptiles (Ref 16). This method is also useful in detecting Common Toad, which often use refugia sheets for shelter.
- 3.4.9 Artificial refugia, in the form of sheets of bitumen roofing felt, measuring approximately 0.5m² in area, were placed in likely basking spots for reptiles within the Survey Area. Such spots include un-shaded patches of vegetation next to cover, grassland and areas adjacent to potential hibernation sites such as piles of rubble, logs, rabbit burrows and near vegetation waste such as arisings from grass cuttings and wood chips.
- 3.4.10 A total of 81 refugia sheets were distributed across the Survey Area. The number of refugia sheets placed in each survey area are presented in **Table 2**.

Table 2. Number of artificial refugia placed within each discrete Survey Area

Survey Area (see Figure 9-6-1)	Approximate size of Survey Area (hectares)	Number of artificial refugia	Density of refugia per hectare
Survey area A	0.2	4	20.0
Survey area B	0.9	13	14.4
Survey area C	1.7	15	8.8
Survey area D	0.6	10	16.6
Survey area E	0.9	15	16.6
Survey area F	3.1	24	7.7

- 3.4.11 Following placement of sheets in each survey area, the artificial refugia were left *in-situ* for up to two weeks to settle in and were then checked by suitably qualified and experienced AECOM ecologists on seven separate occasions, being removed from the Survey Area on the seventh visit after eight weeks being left *in-situ*.
- 3.4.12 Reptile activity is greatly influenced by weather conditions, with reptiles most likely to use artificial refugia in temperatures of between 9°C and 18°C (Ref 12) and in hazy or intermittent sunshine with light winds (Ref 16). The optimal survey period for reptiles (as recommended in the Herpetofauna Worker’s Manual (Ref 17)) is April, May and September. Reptiles are also active in June, July and August; however, they will need to spend less time basking so may be more difficult to find (Ref 17).
- 3.4.13 The dates of reptile surveys and weather conditions during these surveys are presented in **Appendix B**.

3.4.14 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 18).

Visual Inspections

3.4.15 Whilst undertaking other ecological surveys across the Order limits, any incidental observations of herpetofauna were recorded and searches were made in order to 'spot' basking Common Lizards. This species will often sit on top of grass tussocks, debris and felts and will quickly move from sight upon disturbance. Consequently, spotting this species can be more effective than searching under artificial refugia. Common Lizards are often very territorial and will often reuse favourite basking sites (Ref 19). Once these sites are known, spotting can become a relatively successful method of recording Common Lizard.

3.4.16 Any existing hibernation sites within the Survey Area, such as rubble piles or wood piles, were, where possible, also searched for herpetofauna during checks of artificial refugia.

3.5 Population Assessment

3.5.1 Where reptiles are present, estimating population sizes of reptiles can be undertaken using guidance within Froglife's advice sheet Number 10 (Ref 12). This advice sheet provides a simple means of evaluating a species population as 'low', 'good', or 'exceptional' on the basis of the maximum number of adult reptiles (of each species) recorded during a single visit (see **Table 3**).

Table 3. Population estimates of reptile (taken from Froglife, 1999 (Ref 12))

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

3.5.2 The method of population size estimate (as presented in **Table 3**) 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 refugia 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.

3.5.3 There is no published guidance on assessing the population of amphibians within a site and therefore professional judgement has been used when evaluating the importance of the Order limits for amphibians and in particular, Common Toad (a Priority Species and recorded within the Survey Area).

3.6 Biodiversity Importance

- 3.6.1 An essential prerequisite step to allow ecological impact assessment of the Scheme was an evaluation of the relative biodiversity importance of the Survey Area for herpetofauna. This is necessary to set the terms of reference for the subsequent ecological impact assessment.
- 3.6.2 The method of evaluation that was utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (Ref 24). 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.

3.7 Assumption and Limitations

Desk Study

- 3.7.1 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 Scheme.

Field Survey

- 3.7.2 Sufficient information has been gathered to provide a representative sample of the presence of herpetofauna within the Order limits and inform the assessment presented in **Chapter 9: Ecology and Nature Conservation** of this ES [EN010142/APP/6.1].

4. Results

4.1 Desk Study

- 4.1.1 Within the preceding ten years, the desk study returned a single record of Common Lizard through GLNP (supplied grid reference was at a 1km resolution, insufficient to determine distance from the Order limits) and two records of Grass Snake through NBGRC (approximately 300m from the Order limits). The locations of these reptiles, relevant to the Order limits, are presented in **Figure 9-6-1**.
- 4.1.2 No records of other reptile species were received from the record centres.
- 4.1.3 Additionally, the desk study returned twenty-seven records of amphibians (excluding Great Crested Newt) within 2km of the Cable Route Corridor. Sixteen of these records were of Smooth Newt and eight were of Common Frog. Three records were received of Common Toad, the closest of which was adjacent to the Cable Route Corridor, as presented in **Figure 9-6-1**.

4.2 Collaborative Dataset

- 4.2.1 Datasets received from Gate Burton Energy Park (Ref 12) identified a low population of Common Lizard during refugia surveys undertaken within the Cable Route Corridor in 2022 (see **Figure 9-6-1**). Within the same location, it was noted that Grass Snake are potentially present as the landowner there reported such presence.

4.3 Field Surveys

Reptiles

- 4.3.1 No reptiles were recorded during the refugia surveys within the Survey Area in 2023 or as incidental observations anywhere within the Order limits on any other ecological surveys.

Amphibians

- 4.3.2 During the refugia surveys carried out between April and June 2023, three species of amphibian were recorded, these being Common Toad, Common Frog and Smooth Newt. The species, date, number of individuals and location of the amphibians recorded during the refugia surveys are presented in **Table 4**.

Table 4. Amphibians recorded within the Survey Area

Date	Survey Area	Species	Number of individuals
24th April 2023	E	Common Toad	1
	F	Common Toad	4
	E	Common Toad	2

Date	Survey Area (see Figure 9-6-1)	Species	Number of individuals
27th April 2023	F	Common Toad	5
4th May 2023	F	Common Toad	5
		Common Frog	1
9th May 2023	E	Common Toad	2
		Common Frog	2
	F	Common Toad	2
12th May 2023	E	Common Toad	1
		Common Toad	6
	F	Common Frog	1
		Smooth Newt	1
16th May 2023	A	Common Frog	1
	E	Common Toad	2
	F	Common Toad	6
		Common Frog	1
5th June 2023	A	Common Frog	2
	E	Common Toad	1
	F	Common Toad	1

4.3.3 No other amphibians (with the exception of Great Crested Newt) were recorded within the Order limits during any other ecological surveys.

5. Evaluation

5.1 Reptiles

- 5.1.1 The desk study returned three records of two reptile species (Common Lizard and Grass Snake) within 2km of the Order limits.
- 5.1.2 Field surveys within the Principal Site, undertaken between April and June 2023, did not record the presence of any reptile species within the Survey Area.
- 5.1.3 Collaborative datasets identified that field surveys of the Cable Route Corridor, undertaken for the Gate Burton Solar project in 2022, recorded a low population of one species of reptile, Common Lizard (Ref 10). Furthermore, within the same grassland area, the landowner reported the presence of Grass Snake and, although none were recorded during surveys, a precautionary assumption of presence was made. Therefore, a low population of Common Lizard and Grass Snake would qualify as being of Local importance only and a precautionary approach to mitigation will be implemented within this area.
- 5.1.4 No other reptile species were recorded within the Order limits or returned by the desk study.

5.2 Amphibians

- 5.2.1 The desk study returned twenty-seven records of amphibian (Smooth Newt, Common Frog and Common Toad) within 2km of the Order limits.
- 5.2.2 Field surveys, undertaken within the Principal Site in 2023, identified the presence of three species of amphibian (Common Toad, Common Frog and Smooth Newt), occurring in three different locations (Survey Areas A, E and F, see **Figure 9-6-1**). Whilst no published guidance exists on assessing the population of amphibians within a site, using professional judgement and in consideration of the sedentary nature of amphibians and likely presence in the wider area, the Principal Site supports a population of Site importance for Common Toad, Common Frog and Smooth Newt.
- 5.2.3 No other amphibian species were recorded within the Order limits or returned by the desk study or collaborative datasets.

6. Conclusions

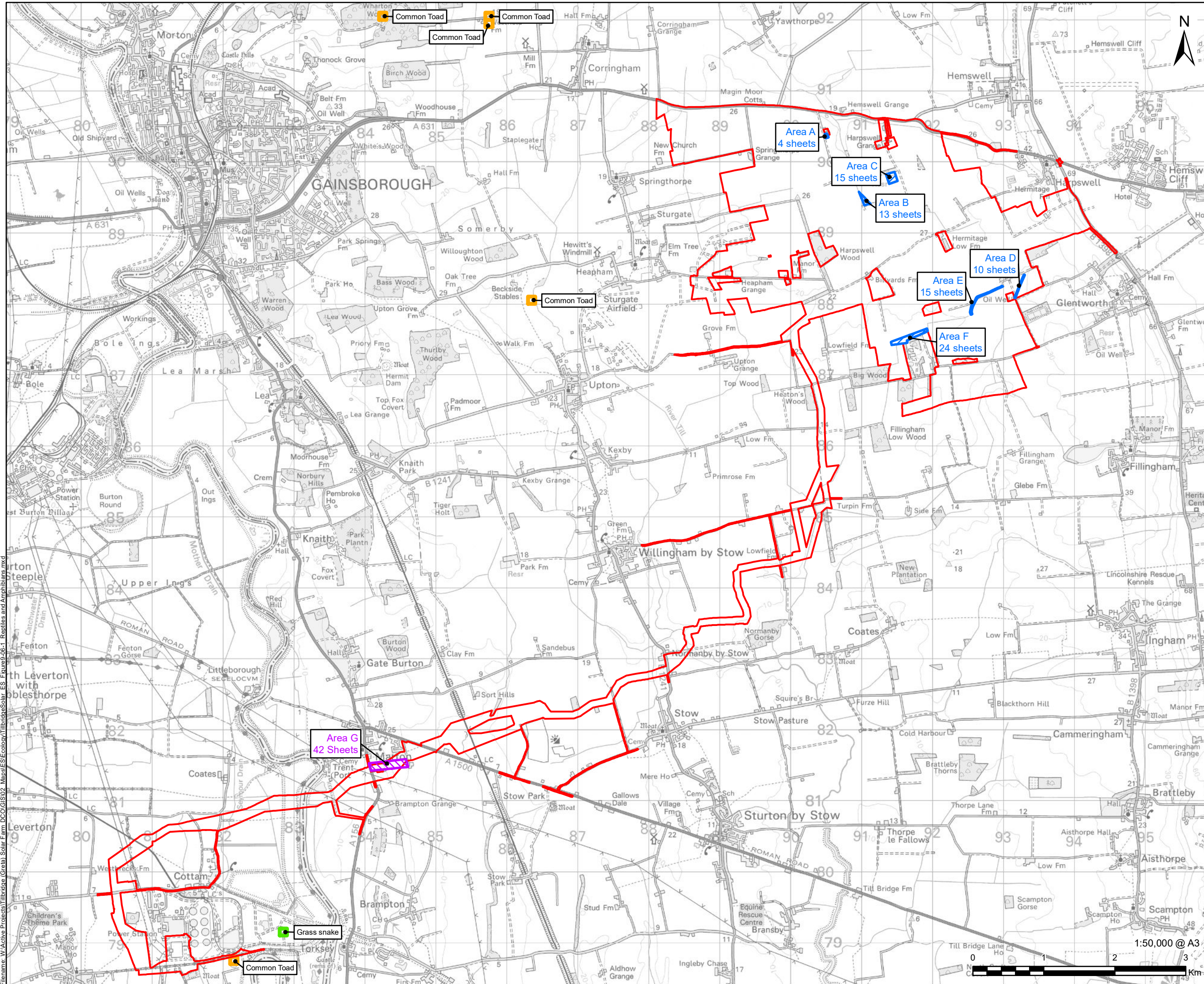
- 6.1.1 The primary purpose of this report is to provide an assessment of the presence or absence of herpetofauna and their biodiversity importance within the Scheme to inform **Chapter 9: Ecology and Nature Conservation** of this ES [EN010142/APP/6.1]. An assessment of potential impacts (considering embedded mitigation), any additional mitigation and residual effects has been undertaken and included within **Chapter 9: Ecology and Nature Conservation** of this ES [EN010142/APP/6.1].
- 6.1.2 Surveys for reptiles, undertaken within suitable habitat at the Principal Site in 2023, did not identify the presence of any reptile species. Furthermore, the desk study identified only one record of Common Lizard, occurring within 2km of the Principal Site. Therefore, reptiles are either absent from the Principal Site or occur at such low densities that detection is difficult. However, the surveys did identify the presence of three amphibian species (Common Frog, Common Toad and Smooth Newt) within the Principal Site.
- 6.1.3 The collaborative datasets identified that reptile surveys, undertaken in 2022 within the Cable Route Corridor by Gate Burton Energy Park (Ref 12), identified the presence of low numbers of one reptile species (Common Lizard) and an assumed presence of Grass Snake. Furthermore, the desk study identified two records of Grass Snake occurring within 2km of the Cable Route Corridor. Whilst reptiles are occurring at low densities within the Cable Route Corridor, construction of the Cable Route Corridor will need to consider appropriate mitigation to avoid potential impacts on reptiles.
- 6.1.4 The desk study also returned records of Smooth Newt, Common Frog and Common Toad within 2km of the Cable Route Corridor. Due to the widespread distribution of these species, presence can be assumed.
- 6.1.1 In summary, the Scheme will embed sufficient mitigation measures (formalised through a Construction and Environmental Management Plan (CEMP)) to ensure that reptiles and amphibians occurring within the Order limits are not impacted upon, in line with legislation, policy and guidance as described in **Section 2** of this report.

7. References

- Ref 1 Russell, L. & Foster, J. (2021). Establishing a baseline dataset for widespread reptiles in England to inform better management of development impacts. ARC report to Natural England. Amphibian and Reptile Conservation Trust, Bournemouth
- Ref 2 Anon, 1981. Wildlife & Countryside Act 1981. HMSO.
- Ref 3 His Majesty's Stationary Office (HMSO). (2018). Conservation of Habitats and Species Regulations 2017 (as amended). HMSO, London.
<http://www.legislation.gov.uk/ukxi/2017/1012/contents/made>
- Ref 4 HMSO. (2006). Natural Environment and Rural Communities Act 2006. Habitats and species of principal importance in England
<https://www.gov.uk/government/publications/habitats-and-species-of-principal-importance-in-england>
- Ref 5 HMSO (1994). Biodiversity: The UK Action Plan. (1994). Available at:
<https://hub.jncc.gov.uk/assets/cb0ef1c9-2325-4d17-9f87-a5c84fe400bd>
- Ref 6 UK Post-2010 Biodiversity Framework. Joint Nature Conservation Committee and Department for Environment, Food and Rural Affairs (2012).
http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf
- Ref 7 Lincolnshire Biodiversity Action Plan. (2012-2020) 3rd edition.
- Ref 8 HMSO (2021). The Environment Act 2021. Available at:
<https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>
- Ref 9 Nottinghamshire Biodiversity Action Group (2008) Local Biodiversity Action Plan.
- Ref 10 [REDACTED]
- Ref 11 AECOM, 2022. Tillbridge Solar Farm Preliminary Ecological Appraisal.
- Ref 12 PINS website: Gate Burton Energy Park
<https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/gate-burton-energy-park/>
- Ref 13 PINS website: Cottam Solar Project
<https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/cottam-solar-project/>
- Ref 14 PINS website: West Burton Solar Project
<https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/west-burton-solar-project/>
- Ref 15 Froglife, 1999. Froglife Advice Sheet 10, Reptile Survey.
- Ref 16 Natural England, 2015. Reptiles: surveys and mitigation for development projects. Available at: <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>
- Ref 17 Gent, T. and Gibson, S., 2003. Herpetofauna Workers' Manual. Joint Nature Conservation Committee.
- Ref 18 ARC, 2016. Reptile Identification Guide. Amphibian and Reptile Conservation Trust.
- Ref 19 Beebee, T. and Griffiths, R., 2000. Amphibians and Reptiles. Collins New Naturalist Library, Book 87.

Appendix A Figures

Figure 9-6-1 Survey areas and records of reptiles and Common Toad within 2km of the Order limits



PROJECT
Tillbridge Solar Project

CLIENT
Tillbridge Solar Limited

CONSULTANT
Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

- LEGEND**
- Order Limits
 - AECOM Reptile Survey Area
 - Reptiles Not Present
 - Gate Burton Reptile Survey
 - Presence of Reptiles in this Area
 - Biological Record Centres
 - Reptile Presence (Grass Snake)
 - Common Toad Presence

NOTES
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Ordnance Survey 0100031673.

ISSUE PURPOSE
DCO Submission

PROJECT NUMBER
60677969

FIGURE TITLE
Reptile Survey Areas and Records of
Reptiles and Common Toad within 2km
of the Order Limits

FIGURE NUMBER
Figure 9-6-1

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Appendix B Survey Dates and weather conditions

Survey Visit	Date	Temperature	Cloud Cover	Precipitation	Ground Conditions
1	24/04/23	9°C - 12°C	50%	Dry	Dry
2	27/04/23	13°C	90%	Dry	Dry
3	04/05/23	14°C - 16°C	20%	Dry	Dry
4	09/05/23	16°C - 19°C	10%	Dry	Wet
5	12/05/23	16°C - 17°C	90%	Dry	Wet (some areas flooded - (particularly survey area F)
6	16/05/23	16°C - 19°C	60%	Dry	Wet/Dry
7	05/06/23	13°C - 16°C	80%	Dry	Dry