

Great North Road Solar and Biodiversity Park

Environmental Statement

Volume 4 – Technical Appendices

Technical Appendix A8.9 – Other Notable and Protected Species
Baseline

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8.9.1 INTRODUCTION

8.9.1.1 INTRODUCTION

- 1 This Technical Appendix (TA) presents the methods and results of baseline studies for notable and protected species in relation to the Great North Road Solar and Biodiversity Park (the Development). The following species are addressed in separate TAs and so are excluded from this TA:
 - Plants;
 - Birds;
 - Bats;
 - Great crested newt;
 - Otter;
 - Water vole;
 - White-clawed crayfish; and
 - Badger.
- 2 The scope of the studies was determined through a combination of a Preliminary Ecological Appraisal (PEA), comprising a desk study and site walkover, and professional judgement with reference to prevailing good practice.
- 3 This TA includes no valuation or assessment of potential effects. These aspects are presented in Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8] of the Environmental Statement (ES).
- 4 This TA is supported by the following appendices:
 - Appendix A – Figures; and
 - Appendix B – Local Records Search.

8.9.1.2 LEGISLATION AND POLICY

8.9.1.2.1 Legislation

- 5 Native reptiles are legally protected by the Wildlife and Countryside Act 1981¹ (as amended), under which it is a legal offence to intentionally or recklessly kill or injure reptiles, including adder *Vipera berus*, grass snake *Natrix helvetica*, common lizard *Zootoca vivipara*, and slow worm *Anguis fragilis*.
- 6 Other protected species may be legally protected by the Conservation of Habitats and Species Regulations 2017² and the Wildlife and Countryside Act 1981¹.

8.9.1.2.2 Conservation Status

- 7 All native reptiles are Species of Principle Importance (SPIs) under Section 41 of the Section 41 of the Natural Environment and Communities Act 2006³. Adder, grass snake, common lizard and slow worm are also Species of

¹ Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [accessed 24/02/2025]

² Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made> [accessed 24/02/2025]

³ Natural Environment and Communities Act 2006. Available from:

<https://www.legislation.gov.uk/ukpga/2006/16/contents> [accessed 24/02/2025]

Conservation Concern in the Nottinghamshire Local Biodiversity Action Plan (LBAP)⁴. Other notable species typically include SPIs and LBAP species.

8.9.1.3 AIMS AND OBJECTIVES

- 8 The aim of the study was to provide a baseline against which the effects of the Development could be assessed. A combination of desk study and field surveys has been undertaken to meet this aim by addressing the following objectives:
 - Determine the suitability of habitats to support notable and protected species; and
 - Establish the presence or likely absence of notable and protected species in suitable habitats.

8.9.1.4 STUDY AREA

- 9 The Study Area for surveys includes suitable habitats within the Order Limits (Figure A8.9.1).

8.9.2 METHODS

8.9.2.1 DESK STUDY

- 10 A desk study was undertaken to assess the characteristics of the landscape and to obtain pre-existing ecological data and information relevant to the assessment. The desk study included the following elements:
 - An assessment of aerial imagery and Ordnance Survey mapping;
 - Nottinghamshire Biological and Geological Records Centre (NBGRC) records of notable and protected species within 2 km of the Order Limits (January 2024); and
 - A search of the MAGIC⁵ website for European Protected Species (EPS) Licenses within 2 km of the Order Limits.

8.9.2.2 SURVEY

8.9.2.2.1 Reptiles

- 11 Reptile surveys focussed on grass snake due to the results of the desk study and the habitats present within the Order Limits. Suitable habitat for adder is not present within the Order Limits, therefore the species is very unlikely to present. Slow worm and common lizard utilise a range of habitats typically including heathland, tussocky grassland and woodland edges, whereas adder are most often associated with open heathland and moorland.
- 12 Results from the PEA and Habitat Surveys, as well as the emerging Development design, informed the location of the reptile surveys by identifying habitats that had the potential to support grass snake and that might be affected by Development. Consequently, unmanaged, rough grassland and grassland in close proximity to watercourses – a habitat with

⁴ Nottinghamshire Biodiversity Action Group (2020). Nottinghamshire Biodiversity Action Plan. Available at: <https://nottsbag.org.uk/lbap/lbap-introduction-and-sections-1-to-6/> [accessed 24/02/2025]

⁵ Available at: www.magic.gov.uk [accessed 11/02/2025]

which grass snake is strongly associated – were the principal habitats in which surveys took place.

- 13 Given the extent of the Development, a sampling approach, including six survey areas (Figure A8.9.1), was adopted to provide a large extent of coverage or representative habitats. Walkover surveys were conducted to visually search for reptiles. Natural refugia in these areas were also searched for reptiles.
- 14 Three visits across the six survey area were undertaken in suitable weather conditions (no heavy rain and temperatures of 9–20°C) on the following dates:
 - 27–30 August 2024;
 - 9–13 September 2024; and
 - 16–20 September 2024.

8.9.2.2.2 Notable and Protected Species

- 15 Sightings and evidence of notable and protected species were recorded during ecological surveys and site visits, including during the winter months as part of bird surveys and nocturnal visits as part of bat surveys.

8.9.2.2.3 Limitations

- 16 Reptile surveys covered a large extent and multiple parts of the Study Area rather than focussing on intensive surveys of fewer or smaller areas. Walkover surveys have lower detectability of reptiles than the deployment and checking of artificial refugia, but the extensive nature of the surveys provided information at a larger spatial scale. Additionally, reptile observations were included as part of other surveys, which took place over a long timeframe and the whole Study Area, particularly those of riparian habitats (i.e., MoRPh River Condition Assessment, otter, water vole and white-clawed crayfish).

8.9.3 RESULTS

8.9.3.1 DESK STUDY

8.9.3.1.1 Reptiles

- 17 The desk study revealed no recent (2012 onwards) records of reptiles within the Study Area, however four records of grass snake were identified within 2 km. All four records were located south-east of the Study Area, three of which were alongside the River Trent. MAGIC returned no granted EPS licenses for reptiles.

8.9.3.1.2 Notable and Protected Species

- 18 423 records of notable and protected species were returned in the desk study, including amphibians, invertebrates, fish, and mammals. A summary of recent records of notable and protected species provided by the NBGRC is presented in Appendix B.

8.9.3.1.3 Amphibians

- 19 The desk study returned 18 recent records of common toad (LBAP and SPI) and three records of palmate newt *Lissotriton helveticus* (LBAP), all of which are from outside of the Order Limits within ponds, woodland and pasture fields. The majority of amphibian records are located in the east, with all palmate newt records in this area.

8.9.3.1.4 Fish

- 20 The desk study returned 32 recent records of four SPI and/or LBAP priority species: European eel *Anguilla anguilla*, bullhead *Cottus gobio*, spined loach *Cobitis taenia* and brown/sea trout *Salmo trutta*, all of which are from outside of the Order Limits. Most records were associated with Moorhouse Beck and The Beck, both of which have confluences with the River Trent and are directly linked to the Order Limits.
- 21 European eel was the most frequently recorded fish species, with only one brown/sea trout record, three bullhead records and four spined loach records.
- 22 River lamprey, sea lamprey and Atlantic salmon have been recorded in the wider catchment.

8.9.3.1.5 Invertebrates

- 23 The desk study returned 58 recent local records of Lepidoptera and Odonata, all outside of the Order Limits in the east, south-east and south. Most records were associated with the River Trent and adjacent waterbodies, with latticed heath *Chiasmia clathrate* (LBAP and SPI) records within a private garden and a single record from an arable field.
- 24 Small red-eyed damselfly *Erythromma viridulum* (LBAP) was the most frequently recorded invertebrate species, most commonly recorded within large waterbodies adjacent to the River Trent

8.9.3.1.6 Mammals

- 25 The desk study returned 223 recent records of five SPI and/or LBAP priority species: brown hare, harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, polecat *Mustela putorius*, and red deer *Cervus elaphus*.
- 26 Brown hare was the most frequently recorded mammal species, with 119 records across the Study Area, predominantly within agricultural fields. 93 records of hedgehog were also recorded throughout the Study Area within fields, along roads and within gardens. The desk study also returned three records of harvest mouse, six records of polecat, and two records of red deer, all from outside the Order Limits.

8.9.3.2 SURVEY

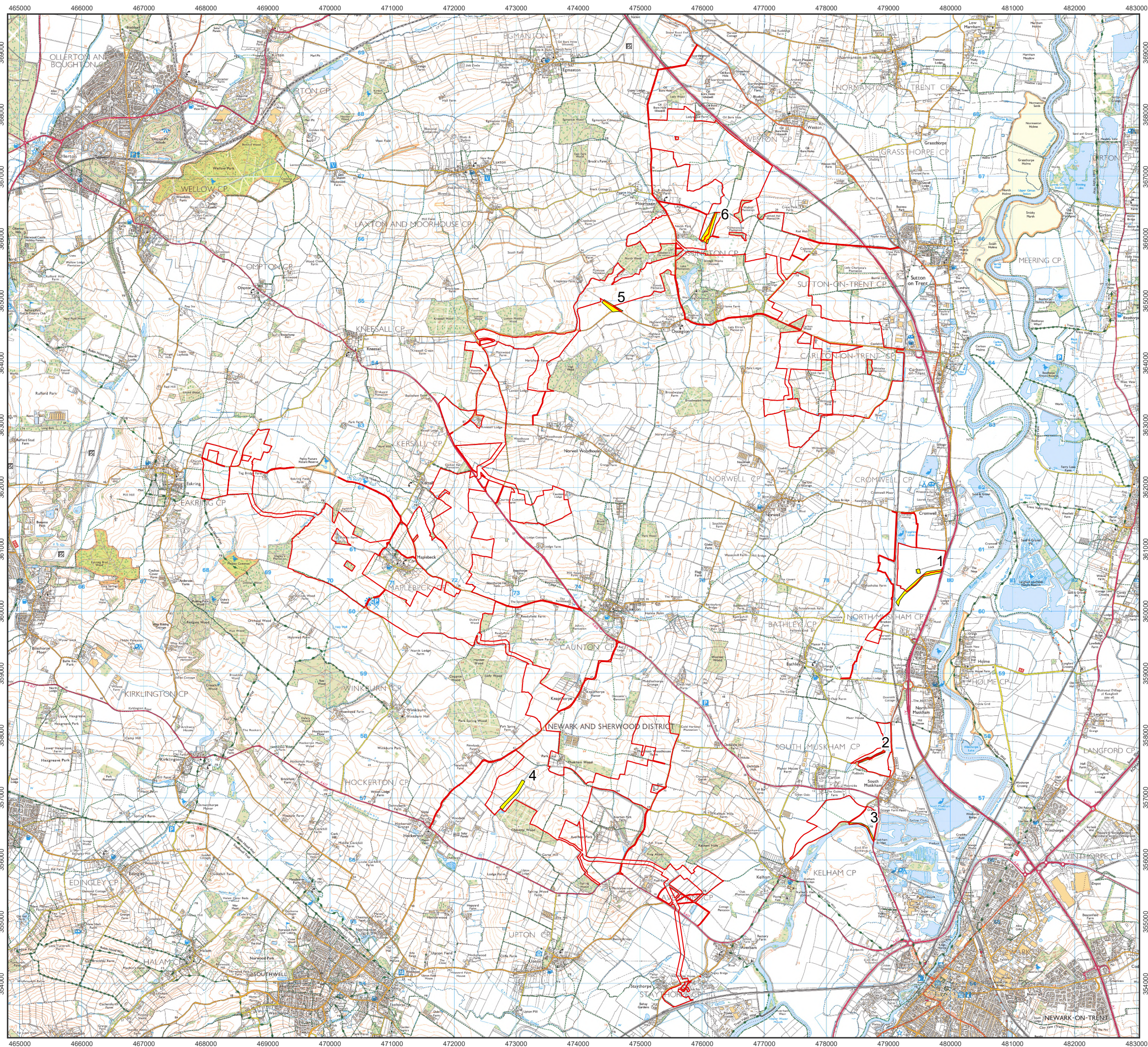
8.9.3.2.1 Reptiles



- 27 No reptiles were recorded during the three walkover surveys or during any other ecology surveys since 2022. It is likely that a low-density population of grass snake is present in suitable habitats.

8.9.3.2.2 Notable and Protected Species

- ²⁸ Anecdotal sightings of notable and protected species were recorded during ecological surveys. Brown hare *Lepus europaeus* was observed year-round in fields throughout the Study Area. Common toad *Bufo bufo* and common frog *Rana temporaria* were observed occasionally in and near water bodies.

APPENDIX A – FIGURES



-  Order Limits
-  Reptile Survey Locations

1:60,000 Scale @ A3

0 0.5 1 2 km



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**Reptile Survey Locations
Figure A8.9.1**

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APPENDIX B – LOCAL RECORDS SEARCH

Common Name	Scientific Name	Count	Date
Odonata			
Common Hawker	<i>Aeshna juncea</i>	1	17/07/2018
Hairy Dragonfly	<i>Brachytron pratense</i>	6	25/05/2023
Small Red-eyed Damselfly	<i>Erythromma viridulum</i>	33	13/08/2023
Butterflies			
Marbled White	<i>Melanargia galathea</i>	1	03/07/2023
Purple Emperor	<i>Apatura iris</i>	1	18/07/2021
White-letter Hairstreak	<i>Satyrrium w-album</i>	2	02/07/2017
Moths			
Latticed Heath	<i>Chiasmia clathrata</i>	13	20/08/2023
Six-belted Clearwing	<i>Bembecia ichneumoniformis</i>	1	03/08/2023
Fish			
Brown/Sea Trout	<i>Salmo trutta</i>	1	22/09/2015
Bullhead	<i>Cottus gobio</i>	3	22/09/2015
European Eel	<i>Anguilla anguilla</i>	24	16/12/2022
Spined Loach	<i>Cobitis taenia</i>	4	08/10/2015
Amphibians			
Common toad	<i>Bufo bufo</i>	18	24/08/2023
Palmate newt	<i>Lissotriton helveticus</i>	3	29/04/2022
Reptiles			
Grass Snake	<i>Natrix helvetica</i>	4	15/09/2023
Mammals			
Brown Hare	<i>Lepus europaeus</i>	119	26/11/2023
Harvest Mouse	<i>Micromys minutus</i>	3	04/10/2021
Hedgehog	<i>Erinaceus europaeus</i>	93	17/09/2022
Polecat	<i>Mustela putorius</i>	6	20/04/2015
Red Deer	<i>Cervus elaphus</i>	2	22/05/2019