

M2 Junction 5 Improvements Environmental Statement Volume 2 - Appendix D.2 Reptile Survey Report June 2019

Status: A1 APPROVED - PUBLISHED

Document Ref: HE551521-ATK-EBD-RP-LE-000017



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Document Title	Volume 2 - Appendix D.2 Reptile Survey Report
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Distribution	
Document Status	A1

Revision History

Version	Date	Description	Originator	Checker	Reviewer	Authoriser
C03	21/05/19	Final for Publicaiton	LS	AR	LS	HC
C02	09/03/19	Draft 2 for HE Review	LS	AR	LS	HC

Reviewer List

Name	Role
Environment Support Centre	SES Environment Group

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Appendix D.2 (Reptile Survey Report)

Appendix D. 2 Reptile Survey Report

D.1 Introduction

Terms of Reference

- D.1.1 Atkins Limited (Atkins) was commissioned by Highways England to collate information relating to reptiles to inform the Environmental Statement (ES) for the M2 Junction 5 Improvements Scheme (hereafter referred to as 'the Scheme').
- D.1.2 WSP undertook reptile surveys in 2017 to inform the Environmental Appraisal Report for the Scheme¹. The purpose of the reptile surveys was to determine whether populations of reptiles are present within the Scheme; provide recommendations to enable compliance with legislation and policy; and, if necessary, identify the need for avoidance, mitigation, compensation or enhancement measures.
- D.1.3 This Technical Appendix summarises the results of the reptile surveys undertaken to-date, including the methods used, results of the desk study and field surveys, and provides an evaluation of the nature conservation value of reptiles within the Survey Area.
- D.1.4 This report provides factual information to support the ES, which will accompany the planning application for the Scheme.

Legislation

- D.1.5 Relevant legislation in relation to hedgerows is provided in Table D.1. below.

Table D.1: Summary of Relevant Legislation

Species	Legislation	Offences	Licensing procedures and guidance
Adder Common lizard Grass snake Slow worm	Wildlife and Countryside Act 1981 (as amended) S.9(1) and S.9(5)	Intentionally kill or injure any common reptile species.	No licence is required. However, an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals. Guidance documents: <i>NE Standing Advice for protected species 2013</i>

¹ WSP (2017) M2 Junction 5 Improvement Scheme, Reptile Survey Report.

D.2 Methodology

Desk Study

Designated Sites

- D.2.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to obtain information on statutory designated sites for nature conservation designated on account of their reptile population within 2 km of the Scheme boundary.
- D.2.2 Desk study records of non-statutory designated sites for nature conservation and roadside nature reserves within 2 km of the Scheme were requested from Kent and Medway Biodiversity Information Centre (KMBIC) by WSP in July 2017, and the citations for these designated sites were requested by Atkins in 2018.

Biological Records

- D.2.3 Records of notable and legally protected species were requested from KMBIC from within 1 km of the Scheme in July 2017. This included records from the Kent Amphibian and Reptile Group (KARG).
- D.2.4 Species of Principal Importance for the Conservation of biodiversity in England, as listed under Section 41 of the Natural Environment & Rural Communities (NERC) Act 2006, and the Kent Biodiversity Action Plan (BAP) were reviewed to identify reptile species of principal importance for biodiversity potentially present within the Scheme footprint.

Field Survey

Defining the Survey Area

- D.2.5 An extended Phase 1 habitat survey was undertaken in 2015, 2016 and 2017 by WSP which appraised the habitats within and adjacent to the Scheme for their suitability to support reptiles and informed the scope of the reptile surveys.
- D.2.6 A reptile presence/likely absence survey was undertaken, during 2017, by WSP ecologists within habitats suitable to support reptiles. The most extensive area of suitable habitat identified by the extended Phase 1 habitat survey was a field located to the east of the M2 on the southern side of the A249. The reptile surveys focused on this area, hereafter referred to as the 'Survey Area,' as shown on Figure 1. The northern, southern and western edges of this field are located within the Scheme boundary.
- D.2.7 Smaller areas of suitable reptile habitat were present within the Scheme, predominantly associated with the highway verges. However, it was not considered safe to survey these areas. The Survey Area supports a mosaic of rough grassland and scrub, which is representative of the suitable reptile habitat present within the wider Scheme. As such, it is intended that the results of the reptile survey of the Survey Area are used to extrapolate the likely presence of reptiles across the Scheme. This approach is consistent with Design Manual for Roads and Bridges (DMRB) guidance². An extended Phase 1 habitat survey carried out by Atkins in October 2018 identified an area of suitable reptile habitat

² Highways Agency (now Highways England) May 2005 Design Manual for Roads and Bridges, Volume 10, Section 4 Part 7 Nature Conservation Advice in Relation to Reptiles and Roads (HA 116/05)

located within the grounds of the property adjacent to the Oad Street and A249 Junction, adjacent to an existing waterbody, as shown on Figure 1. This area comprised a disused allotment, rough grassland, rubble and log piles and various other debris that was considered to provide suitable refugia for reptiles.

Reptile Survey Methodology

- D.2.8 Surveys were conducted between May and September 2017. Surveys involved placing artificial refugia and subsequent checks for reptiles basking on or sheltering beneath them. Artificial refugia surveys were undertaken in line with guidance provided in Froglife Advice Sheet 10³ and the Herpetofauna Workers Manual⁴. The method involves the placement of artificial refugia (in this instance thick roofing felt) cut to a size of 50 cm x 100 cm within suitable reptile habitat at a density of at least ten per hectare. The Survey Area is 3.4 hectares, and a total of 104 refugia were deployed throughout the Survey Area on 8 May 2017.
- D.2.9 The refuges were left for a period of at least seven days to 'bed-in' and enable reptiles to find and make use of them. The refugia were then checked, lifted and turned over, to search for the presence of reptiles on seven separate occasions.
- D.2.10 In addition, direct observation was undertaken in conjunction with artificial refugia surveys to search for reptiles. This technique involves walking slowly and carefully throughout the Survey Area, paying particular attention to potential basking spots in order to observe reptiles in their natural habitat.
- D.2.11 During hot summer months, reptiles have a lesser requirement to bask and consequently make use of artificial refuges less during these periods. As such, surveys were not undertaken during July and August. Dates of each survey visit and weather conditions are provided in Table D-2 below.

Table D.2: Timings and weather conditions during survey visits.

Visit	Start/End Time	Temperature (°C)	Cloud (Oktas)	Wind (Beaufort)	Rain
1 (01/06/17)	08:00 / 09:30	16	1	1	No Rain
2 (09/06/17)	10:25 / 11:30	16	6	2	No Rain
3 (04/09/17)	14:00 / 15:30	18	4	1	No Rain
4 (15/09/17)	10:20 / 11:50	12	2	1	No Rain
5 (18/09/17)	10:35 / 11:35	14	6	2	No Rain
6 (19/09/17)	10:45 / 11:35	11	6	1	No Rain
7 (27/09/17)	16:45 / 17:45	19	7	2	No Rain

³ Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

⁴ Gent, T. & Gibson, S. (2003) Herpetofauna Workers Manual. Joint Nature Conservancy Council, Peterborough UK.

Assessment

Determination of Reptile Population Importance

- D.2.12 The reptile population has been valued in a geographical context following the framework provided in interim advice note 130/10⁵.

Limitations

- D.2.13 The following limitations were encountered:
- The months of March to October are generally considered suitable for reptile surveys, but the most optimal months for surveying tend to be April, May and September. No surveys were undertaken during April or May, with the majority of survey visits undertaken in September;
 - Refuges comprised roofing felt only, rather than a combination of materials (roofing felt and corrugated iron 'tins') to help increase the range of captures as far as possible;
 - Guidance in Froglife Advice Sheet 10⁶ states that the optimum air temperature for reptile surveys is between 9°C and 18°C. The temperature during the survey carried out on 27 September 2017 was 19°C;
 - Reptile surveys have not been carried out within suitable road verge habitat along the A249. The A249 is a fast road with narrow, steep or densely vegetated verges along much of its length, and only limited stretches of crash barrier. Consequently, the road verge habitat was not considered safe to survey;
 - Citations for non-statutory designated sites were not requested initially by WSP. These were subsequently requested by Atkins in 2018. These, and further interrogation of the desk study data, identified the presence of adders within the Stockbury Roadside Nature Reserve (RNR MA11) at the southern extent of the Scheme; and
 - It has not been possible to survey the area of suitable reptile habitat identified during October 2018 and shown on Figure 1 given the seasonal constraints associated with reptile surveys.
- D.2.14 The above limitations were not considered significant, and the conclusions drawn from the data are considered valid.

D.3 Results

Desk Study

Designated Sites

- D.3.1 There are no designated sites within the search area which are designated specifically on account of the reptile population present.

⁵ Interim Advice Note 130/10 – Ecology and Nature Conservation: Criteria for Impact Assessment. Highways England, 2010.

⁶ Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

Biological Records

- D.3.2 The desk study identified two recent records of slow-worm within 1 km of the Scheme, the closest of which is located approximately 500 m south-west of the Scheme. The other was from approximately 700 m north-east of the Scheme. Both records appeared to be in close proximity to the A249.
- D.3.3 There are no recent records of grass snake or common lizard within 1 km of the Scheme.
- D.3.4 Three recent records of adder within 1 km of the Scheme were provided. These were from within or close to RNR MA11 which is situated partially within the Scheme, with the adder records being located approximately 120 m south-west of the Scheme boundary. All three records were from 2014 and the location of the records and RNR MA11 are shown on Figure1. The citation for RNR MA11 states that reptiles have been recorded within this site.

Field Survey

- D.3.5 Slow-worm and common lizards were recorded during the field surveys. No other species of reptile were encountered during the surveys. Table D.3 below summarises the findings of the field surveys.

Table D.3: Reptile survey data

Survey Visit	Reptiles Found
1 (01/06/17)	Slow worm – 1 adult male
2 (09/06/17)	Common lizard – 1 adult (unsexed)
3 (04/09/17)	Slow worm – 1 adult female Common lizard – 1 juvenile
4 (15/09/17)	Slow worm – 3 adult females
5 (18/09/17)	Slow worm – 2 adult females
6 (19/09/17)	Slow worm – 1 adult female
7 (27/09/17)	Slow worm – 2 adult females Common lizard – 1 adult (unsexed)

Description of Reptile Population

- D.3.6 Froglife Advice Sheet 10⁷ provides guidance on classifying the relative size of reptile populations on the basis of survey counts, as shown in Table D.4, below. It should be noted that the Advice Sheet states that to establish presence, generally at least seven visits in suitable weather conditions at the appropriate time of year may be required (which is what has been undertaken in this instance). However, for detailed surveys in order to gain some idea of relative population size, at least 20 visits per season in suitable weather conditions are recommended. The population classification information in Table D.4 is therefore intended to be used following a more detailed survey. Nevertheless, it remains a useful tool following a presence/likely absence survey to give an indication of the likely population size of the reptile species present.

⁷ Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

Table D.4: Population size class for widespread reptiles

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

Figures in Table 3 refer to maximum number of adults seen by observation and/or under refugia by one person in one day.

- D.3.7 Based on Table D.4, a low population of slow-worm and a low population of common lizard are likely to be present within the Survey Area. Given the presence of a juvenile common lizard, this species is likely to breed within the Survey Area.
- D.3.8 Given that the Survey Area is a representative example of the reptile habitat within the Scheme as a whole, it is considered likely that low populations of slow-worm and common lizard are present in suitable habitat throughout the Scheme.
- D.3.9 Based on the desk study data, adder may also be present within the Scheme. Given that no adders were identified during the field survey, and considering the location of the desk study records, it is considered likely that they are predominantly associated with the southern extent of the Scheme on the northern side of the A249 in the vicinity of RNR MA11, where the highway verge is wider and there is a south-facing slope present.

D.4 Evaluation

- D.4.1 Slow-worm, common lizard and adder are protected under the Wildlife and Countryside Act 1981 (as amended) from killing and injury. All three species are species of Principal Importance for the conservation of biodiversity in England, as listed under Section 41 of the NERC Act (2006), but they are not Kent Biodiversity Action Plan species. Slow-worm and common lizard are the most widespread and common UK reptile species, although they are declining⁸. Adders are a widespread species throughout the UK⁹ and are locally common, particularly in southern England. However, this species has also declined over much of England¹⁰. In Kent adders are not evenly distributed across the county and have a close association with calcareous grassland.
- A.1.1 Based on the low numbers of reptiles likely to be present and given that slow-worm and common lizard, in particular, are common and widespread species, the reptile population within the Scheme is considered to be of local nature conservation importance.

⁸ Highways Agency (now Highways England) May 2005 Design Manual for Roads and Bridges, Volume 10, Section 4 Part 7 Nature Conservation Advice in Relation to Reptiles and Roads (HA 116/05).

⁹ www.arc-trust.org/adder.

¹⁰ www.kentarg.org/reptiles.

Appendices

Appendix A. Figures

Figure 1 Reptile Survey Area

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Printed on paper from well-managed forests and other controlled sources.

Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ
Highways England Company Limited registered in England and Wales number 09346363

