

## Reptile Survey Report

Land off Dinting Road, Hadfield

Prepared on behalf of  
Loxley Homes



**Report Reference:** SE0714-03/I/03a/DH

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**Full Address of Site:** Land off Dinting Road, Hadfield, Derbyshire, SK13 6DE

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This report is based on survey data gathered between June and July 2015 at this land off Dinting Road, Hadfield, Derbyshire SK13 6DE

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## 1.0 SUMMARY

- 1.1 An initial walkover survey of this site off Dinting Road, Hadfield, Derbyshire SK13 6DE was conducted by Solum Environmental Ltd in June 2015 under commission from Mr Steven Dobie of Loxley Homes and identified habitat with the potential to support reptiles. This reptile survey report should be read in conjunction with the subsequent Preliminary Ecological Appraisal report for the site (*Ref: SE0714-03/I/01a*) which was produced in conjunction with the current report and a bat survey report (*Ref: SE0714-03/I/02a*).
- 1.2 Solum Environmental was subsequently commissioned by the same client in June 2015 to undertake surveys to determine the presence or likely absence of reptiles and to assess the potential impacts of the proposed development on this species group if present. Survey was commissioned to support a planning application for a residential development [REDACTED]
- 1.3 The application site is bound by Dinting Road to the southwest, a tree-lined railway embankment to the northeast and by a minor road (Shaw Lane) and residential properties to the north; land within the application boundary slopes gently to the southwest and measures approximately 4.8 ha comprised predominantly of species-poor grassland grazed by horses.
- 1.4 Habitat within the survey area was assessed for its potential to support reptiles and, in June 2015, numbered artificial refugia tiles of roofing felt were laid out at those locations identified as having the greatest potential to support reptiles. A total of seven survey visits were conducted by a suitably experienced reptile surveyor and an ecological assistant, between June and July 2015. Survey visits followed the best practice guidelines set out in *JNCC Herpetofauna Workers' Manual (2003)* and *Froglife Advice Sheet 10: Reptile Survey*. All surveys were undertaken during optimal basking periods (08.30 to 11.00 or 16.00 to 19.00). Surveys were not carried out in windy conditions nor below air temperatures of 9°C.
- 1.5 No reptiles were recorded during any of the seven field surveys. Survey recorded 15 juvenile common toad *Bufo bufo* under artificial refugia in survey zone B along the eastern boundary woodland edge adjacent to the railway line and embankment.
- 1.6 The application boundary provides potential habitat for grass snake *Natrix natrix* in particular. The sunken stream (slow-moving when flowing) provides favourable foraging habitat, whilst its level, vegetated flood plain area (FPA) and stream banks offer thermoregulatory/refuge opportunities. However, due to encroaching tall ruderals, the water flow is choked with vegetation with virtually no open water, other than to the north of survey zone A. The wooded edge forming the eastern boundary of the site provides thermoregulatory and refuge opportunities at the edge habitat created at its base, where two different habitat structures join, forming a favourable microhabitat for grass snake. Furthermore, a strip of scrub and scattered trees running parallel to the wooded edge offers favourable terrestrial habitat for grass snake at the ecotone it creates with the grassland habitat. However, future reptile colonisation of the habitat lying within the application boundary is improbable given the apparent absence of reptiles in the area (no evidence within the desktop records) and the availability of more favourable habitat adjacent to the railway south of Dinting road, providing a mosaic of large ponds, grassland, scrub and wooded areas.
- 1.7 The proposed development of this site will not, therefore, have any impact upon reptiles.

## 2.0 INTRODUCTION

### 2.1 Background and Commission

2.1.1 An initial walkover survey of this site off Dinting Road, Hadfield, Derbyshire SK13 6DE was conducted by Solum Environmental Ltd in June 2015 under commission from Mr Steven Dobie of Loxley Homes and identified habitat with the potential to support reptiles. Solum Environmental was subsequently commissioned to conduct a suite of artificial refugia and visual encounter surveys to determine the presence or likely absence of reptiles within the application boundary. This reptile survey report should be read in conjunction with the subsequent Preliminary Ecological Appraisal report for the site (Ref: SE0714-03/I/01a) which was produced in conjunction with the current report and a bat survey report (Ref: SE0714-03/I/02a).

2.1.2 It is our understanding that the proposed development will include the following:

- Construction of [REDACTED] residential units
- Retention of greenspace to encourage biodiversity
- Reinstatement of a pond
- Loss of several trees
- Loss of grassland
- Introduction of new access road from Dinting Road

2.1.3 Outline plans to inform surveyors of the extent of the proposed re-development are presented in **Plan 2**.

2.1.4 Phase 1 Habitat survey had previously been conducted at this site by Arbtech Ltd in September 2011 (Dated 18<sup>th</sup> December 2012); this was followed by a range of protected species surveys undertaken by Solum Environmental in March and May 2013 (Report ref: SE478/I/01/DH Protected Species Ecological Report). These surveys were carried out and reported under separate commissions intended to support a similar development scheme proposal at this site. No reptiles were recorded during the Protected Species surveys conducted for the previous application by Solum Environmental.

### 2.2 Legislation

2.2.1 The four widespread species of reptile in the UK (i.e. common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*) are all protected under the Wildlife and Countryside Act 1981 (as amended).

2.2.2 The protection under the above legislation means that it is illegal to:

- Kill or injure a reptile
- Trade/sell a reptile.

2.2.3 While the habitats of these species are not specifically protected, disturbing or destroying reptile habitat during the course of development activities while reptiles are present is likely to lead to an offence under Wildlife and Countryside Act 1981 (as amended).

### 2.3 Aims of the Survey

2.3.1 Survey aimed to:

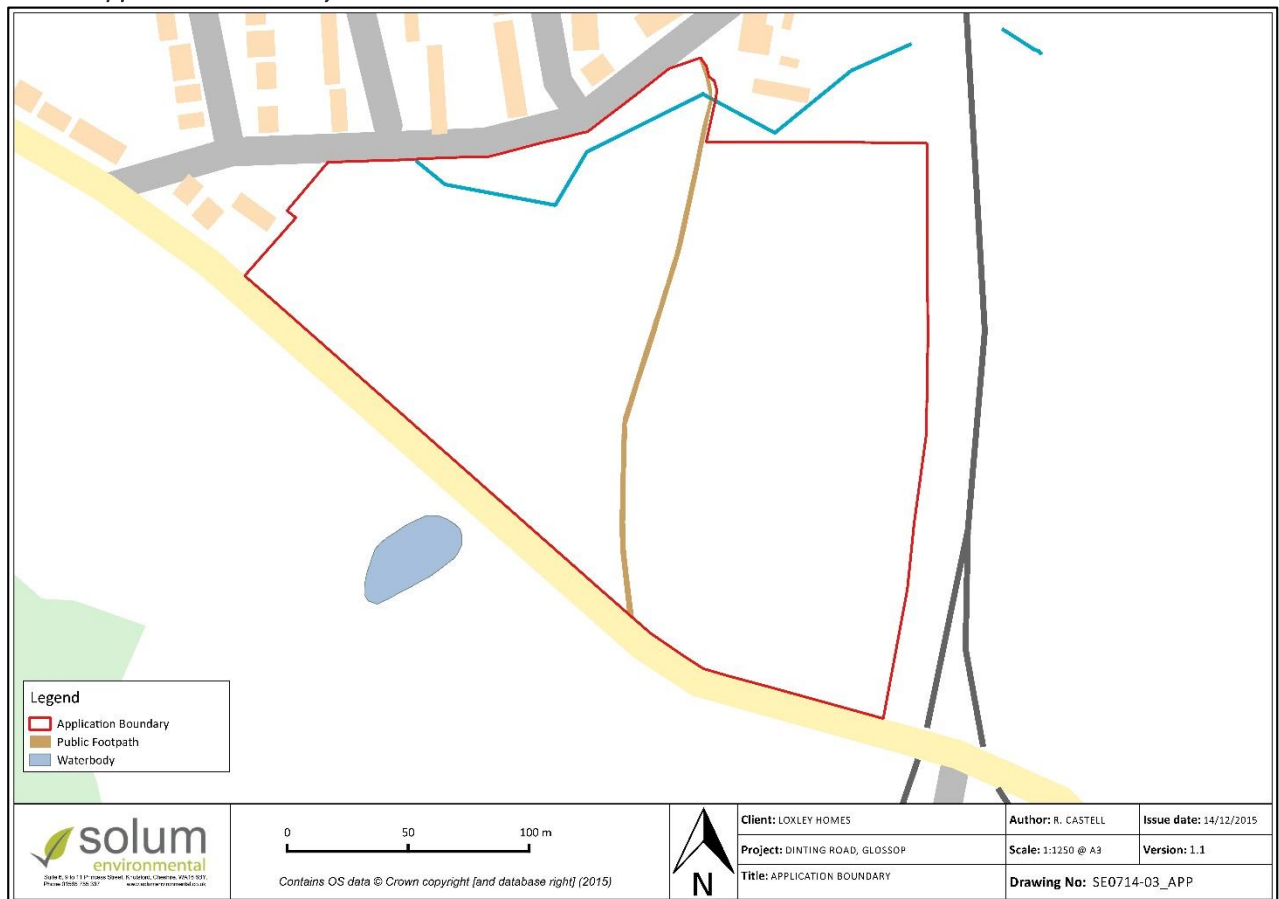
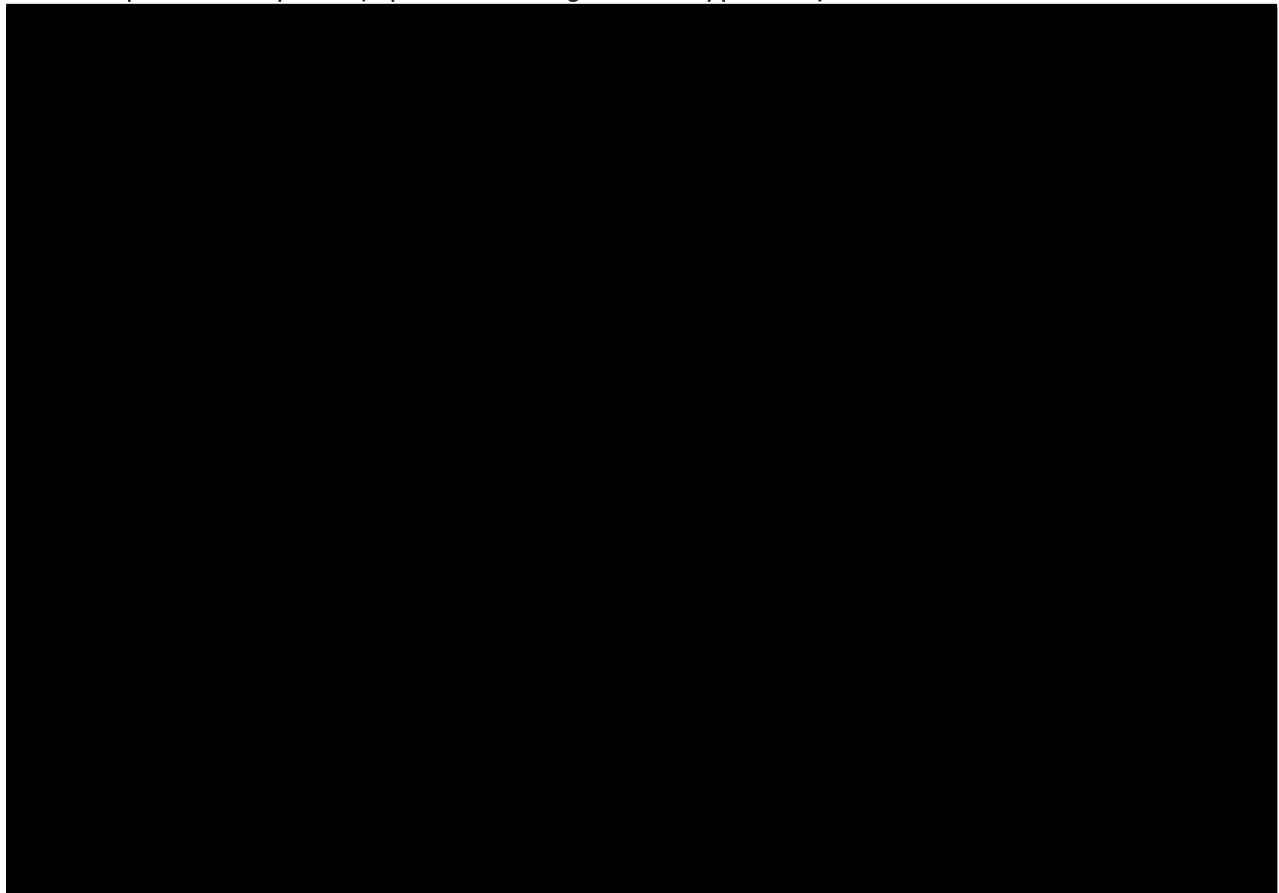
- Determine the presence or likely absence of reptiles, most notably grass snake, and the location and size of any reptile populations occurring within the application boundary or adjacent to it.
- Determine the impact of the proposed development scheme on any reptile population(s) identified by survey.
- Highlight any potential ecological constraints to the proposed development of this site.
- Advise on any mitigation or licensing requirements where development is likely to impact reptiles.

### 2.4 Site Context

2.4.1 The application boundary and survey area is presented at **Plan 1**.

2.4.2 The application site measures approximately 4.8 ha and comprises predominantly of species-poor grassland in current use as a grazed horse paddock, which slopes gently to the southwest. The application site is bound by Dinting Road to the southwest, a tree-lined railway embankment to the northeast and by a minor road (Shaw Lane) and residential properties to the north.

2.4.3 The application site is approximately centred on OS Grid Reference SK 019950.

**Plan 1: Application Boundary****Plan 2: Proposed development (reproduced at larger size at Appendix 1)**

## 3.0 SURVEY METHODOLOGY

### 3.1 Desktop Survey

- 3.1.1 Desk study was carried out in June 2015 to identify any nearby national and local nature conservation designations, and any protected species records which already exist for this area. The *MagiC* website was interrogated to determine whether any statutory or non-statutory conservation sites lie within 2 km of the survey area.
- 3.1.2 Extended Phase 1 Habitat survey had previously been conducted at this site by Arbtech Ltd in September 2011 (Dated 18<sup>th</sup> December 2012); this was followed by a range of protected species surveys (including reptiles) undertaken by Solum Environmental in March and May 2013 (Report ref: *SE478/J/01/DH Protected Species Ecological Report*). These surveys were carried out and reported under separate commissions intended to support a similar development scheme proposal at this site.
- 3.1.3 Historic records of protected species were requested from Derbyshire Wildlife Trust; details were obtained of all protected species recorded within a 1 km radius over the past 10 years. The National (UK) and local (Derbyshire) Biodiversity Action Plans (BAPs) were also interrogated for protected habitats and species relevant to this site.

### 3.2 Field Survey

- 3.2.1 Survey aimed to confirm presence or likely absence of reptiles within the site boundaries and to identify those areas of habitat that held significant value to any reptile species recorded.
- 3.2.2 Habitat within the survey area was assessed for its potential to support reptiles and, in June 2015, numbered artificial refugia tiles of roofing felt were laid out at those locations identified as having the greatest potential to support reptiles. Tiles were distributed throughout these key areas of habitat at a density of approximately 5 per ha, in line with best practice guidelines for survey, then left for a number of weeks to allow them to bed-in before field survey commenced. The locations of these tiles is presented in *Drawing SE0714-03\_AR* in **Appendix 1**.
- 3.2.3 Field survey within the application boundary targeted features that would prove attractive to reptiles (in particular grass snake) e.g. woodland edge, marshy grassland, and the stream corridor. Survey within the stream corridor focused on the FPA of the stream, which was dominated by tall ruderals, marshy grassland and patches of bramble *Rubus fruticosus*. The wooded edge forming the eastern boundary of the site was also a focus of survey effort, given its proximity to a railway bank. The wooded edge represented a transitional habitat (ecotone) at the junction of two distinct habitat types, which is favoured by reptiles for both thermoregulatory and refuge use. Furthermore, a strip of scrub on a bank of western orientation, and adjacent to a wooded edge provides favourable terrestrial habitat for grass snake, and thus this area was targeted during survey. The targeted survey area was divided into three distinct zones for the purposes of field survey. Descriptions of the habitats, accompanied by example photographs, and details of survey methodologies specific to each these areas are presented in **Table 2**.
- 3.2.4 Each survey visit incorporated two standardised methodologies:
- Artificial refugia surveys (ARS) - Reptile tiles were quietly approached to observe any reptile that may be basking atop and then gently hand-lifted to check beneath and around the tile for any reptiles.
  - Visual encounter surveys (VES) – Surveyors slowly examined likely habitat features, e.g. banks, brash piles, hedge bases and woodland edges, with an aim to make a direct observation of any reptiles within those features.
- 3.2.5 A total of seven survey visits were conducted by a suitably experienced reptile surveyor and an ecological assistant, between June and July 2015. Survey visits followed the best practice guidelines set out in *JNCC Herpetofauna Workers' Manual (2003)* and *Froglife Advice Sheet 10: Reptile Survey*. All surveys were undertaken during optimal basking periods (08.30 to 11.00 or 16.00 to 19.00). Survey was not carried out in windy conditions or when air temperature was below 9°C. Full details of all survey dates, personnel and weather conditions are presented in **Table 1**.
- ### 3.3 Survey Constraints
- 3.3.1 Optimal season for survey is between April and June or in September when reptiles can be more easily detected due to extended periods of basking. Basking activity continues throughout July but for shorter time periods. To compensate, surveys at this site carried out in July were conducted earlier or later in the day when reptiles were more likely to be detected basking. Survey conducted on the 15<sup>th</sup> July was subject to sub-optimal conditions, with regard to wind, however it was the surveyor's opinion that this was not a constraining factor to survey.
- 3.3.2 Grazing horses within the fields comprising the main body of the site were considered to have the potential to disturb artificial refugia through trampling and grazing, thus restricting the effectiveness of the survey and the likelihood of reptiles




utilising the artificial refugia. To compensate, additional refugia were placed across the site to create a greater density per ha and increase the likelihood of detecting reptiles.

**Table 1: Field Surveys – Surveyors, dates and weather conditions**

Survey	Date / Time	Surveyors	Weather Conditions
1	19 <sup>th</sup> June 2015 / 07.30	David Hackett / Matt Wiggins	Rain: 0 / Mostly cloudy / Air temperature: 11°C / Wind: 9 mph (WNW)
2	23 <sup>rd</sup> June 2015 / 17.30	David Hackett / Matt Wiggins	Rain: 0 / Partly cloudy / Air temperature: 19°C / Wind: 6 mph (Variable)
3	25 <sup>th</sup> June 2015 / 19.00	David Hackett / Matt Wiggins	Rain: 0 / Partly cloudy / Air temperature: 20°C / Wind: 9 mph (SW)
4	27 <sup>th</sup> June 2015 / 17.00	David Hackett / Matt Wiggins	Rain: 0 / Clear / Air temperature: 20°C / Wind: 20 mph (W)
5	3 <sup>rd</sup> July 2015 / 08.30	David Hackett / Matt Wiggins	Rain: 0 / Partly Cloudy / Air temperature: 17°C / Wind: 5 mph (Variable)
6	15 <sup>th</sup> July 2015 / 16.00	David Hackett / Matt Wiggins	Rain: 0 / Partly Cloudy / Air temperature: 17°C / Wind: 22 mph (WNW)
7	23 <sup>rd</sup> July 2015 / 16.30	David Hackett / Matt Wiggins	Rain: 0 / Partly Cloudy / Air temperature: 16°C / Wind: 13 mph (NW)

**Table 2: Description of habitats and survey methodology by survey zone**

ZONE	DESCRIPTION	EXAMPLE PHOTOGRAPH
<b>A</b>	Survey effort focused within the stream corridor. Flood Plain Areas of the stream, dominated by tall ruderals, marshy grassland and bramble scrub were targeted in this zone. The stream corridor offers both thermoregulatory and refuge opportunities, as well as foraging potential. Coupled with VES surveys, artificial refugia were placed within the FPA of the stream.	
<b>B</b>	Survey effort focused along the wooded edge forming the eastern boundary of the site. The abrupt edge habitat created at the junction of two distinct habitat types creates a distinct ecotone, and was scrutinised through VES for any evidence of thermoregulatory use. ARS within this zone focused on the eastern boundary of the site, along the abrupt edge habitat at the wooded edge along the eastern boundary of the site.	

<b>C</b>	<p>Survey effort focused within the strip of scrub and scattered trees adjacent to the wooded edge along the eastern boundary of the site. VES focussed within the tussocky grassland and along the edge habitat provided at the base of the scrub. ARS focused on small openings between tussocks of rush and semi-improved grasses.</p>	 A photograph showing a landscape with a grassy field in the foreground, scattered trees and shrubs in the middle ground, and a blue sky with white clouds in the background. The field appears to be a mix of green grass and some yellow wildflowers.
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### 3.4 Survey Personnel

- 3.4.1 **Dr David Hackett** MCIEEM is Director at Solum Environmental. David is a highly-experienced, general-species ecologist and is experienced in reptile survey. **Matt Wiggins** MSc is Graduate Ecological Assistant at Solum Environmental and is experienced in reptile surveys. Matt is a member of the North Merseyside Amphibian and Reptile Group.



## 4.0 SURVEY RESULTS

### 4.1 Desktop Survey

- 4.1.1 The MagiC site check failed to identify any designated or non-designated statutory sites within 2 km of the application site. The land within the application boundary does not form part of any site designated for nature conservation but it does fall within a SSSI Impact Risk Zone. The Peak District (National Park) lies approximately 1.7 km to the northeast of the application site.
- 4.1.2 The ecological data request returned no records of any reptile species within 1 km of the application boundary over the past 10 years and the previous reptile surveys conducted within the same application site by Solum Environmental in 2013 failed to identify any reptiles.

### 4.2 Field Survey

- 4.2.1 Within the application boundary, field survey first targeted the FPA of the stream corridor (Survey Zone A). The stream corridor provides favourable terrestrial habitat for grass snake, as well as foraging opportunities. However, the water flow has largely been choked by tall ruderal vegetation leaving little to no open water, other than a stretch in the north of this survey zone. The slow, trickling flow of the stream, petering out into a damp, marshy FPA provides favourable foraging habitat, as well as thermoregulatory/refuge opportunities at the edges of dense stands of tall ruderal. Furthermore, the stream corridor offers limited mobility within the site and beyond its boundaries. Despite the favourable habitat features however, no reptiles were recorded within this survey zone.
- 4.2.2 Field survey also targeted field boundary features forming the eastern boundary of the site (Survey Zone B). The wooded edge creates a favourable ecotone at the abrupt edge habitat created at the junction of two distinct habitat types, providing ideal thermoregulatory conditions, as well as immediate cover. The wooded edge also provides the opportunity for mobility both the full length of the site and connectivity beyond, via the adjacent railway bank. Despite the apparently favourable habitat here, and its connectivity to the railway bank, no reptiles were recorded within this survey zone.
- 4.2.3 The strip of scrub (sited on a westerly-orientated bank) which runs parallel to the wooded edge forming the eastern boundary of the site provided favourable refuge/thermoregulatory opportunities for grass snake. Despite the favourable habitat features present along here no reptiles were recorded within this survey zone.
- 4.2.4 Full survey data for each survey visit is presented below in **Table 3**.

**Table 3: Full Survey Results**

DATE	SURVEYOR	START	TEMP (°C)	WIND (km/h)	WIND DIR.	CLOUD (%)	RESULTS
19/06/2015	DH/MW	07.30	11	9.3	WNW	Mostly Cloudy	Nil
23/06/2015	DH/MW	17.30	19	5.6	Variable	Partly Cloudy	Nil
25/06/2015	DH/MW	19.00	20	9.3	SW	Partly Cloudy	Nil
27/06/2015	DH/MW	17.00	20	20.0	W	Clear	2 Toad (mat 7)
03/07/2015	DH/MW	08:30	17	5.0	Variable	Partly Cloudy	2 Toad (mat 12) 1 Toad (mat 1)
15/07/2015	DH/MW	16.00	17	22.0	WNW	Partly Cloudy	2 Toad (mat 12) 4 Juvenile Toad (mat 1) 1 Adult and 1 Juvenile Toad (mat 10) 1 Juvenile Toad (mat 14)
23/07/2015	DH/MW	16.30	16	13.0	NW	Partly Cloudy	2 Juvenile Toads (mat 1)

## 5.0 CONCLUSION

- 5.1 Neither desk study nor extensive field survey produced any historic or current evidence of reptiles on or within 1 km of the application site. Despite the presence of habitat with the potential to support reptiles within the survey area, field survey did not record any evidence of reptiles within the application boundary.
- 5.2 The stream corridor (survey zone A) provides the most favourable habitat for grass snake within the application site. The stream (with a slow water flow where flowing) provides favourable foraging habitat, whilst its flat vegetated flood plain area and the easterly oriented bank of the stream offer thermoregulatory/refuge opportunities. However, due to encroaching tall ruderals, the water flow is choked with vegetation, with virtually no open water. The pond proposed for this area (as noted in **Plan 2**) would enhance the FPA for amphibians, and thus further enhance this area of the site for grass snake, providing further foraging opportunities. The wooded edge (survey zone B) forming the eastern boundary of the site provides thermoregulatory and refuge opportunities at the edge habitat created at its base, where two different habitat structures join. This is also the case in survey zone C, running parallel to the wooded edge, which produces thermoregulatory/refuge opportunities within its edge habitat, as well as within bramble scrub. However, currently habitat zones B & C are degraded in their suitability for reptiles due to constant disturbance from grazing horses.
- 5.3 The land within the application site is bound to the east by a railway, with banks of the railway line dominated by woodland and scrub; this habitat represents potential habitat for reptiles, and for grass snake in particular. The retention of the stream corridor and FPA within the application boundary (as indicated on the proposed site layout) will retain the value of the application site for reptiles, and maintain connectivity to the wider landscape via the stream; the maintenance of the wooded edge forming the eastern boundary of the site will retain the connectivity (via the railway bank) of this habitat to the wider landscape should reptiles be present within the vicinity. However, future reptile colonisation of the habitat lying within the application boundary is improbable given the apparent absence of reptiles in the area (no evidence within the desktop records) and the availability of more favourable habitat adjacent to the railway south of Dinting road, providing a mosaic of large ponds, grassland, scrub and wooded areas.
- 5.4 The proposed development of this site is not, therefore, expected to have any impact upon reptiles and there will be no loss of habitat with the potential to support reptiles within the application boundary, should future colonisation occur.

## 6.0 RECOMMENDATIONS

- R1** *The proposed landscape design should retain, enhance and create terrestrial habitat suited to reptiles at this location, whilst maintaining connectivity to the stream to facilitate any future colonisation by reptiles at the same time enhancing the site for amphibians and invertebrates. These measures should include the maintenance of the sunken stream corridor and the provision of refugia, e.g. log piles at this location.*
- R2** *Steps should be taken to ensure that pollution of the watercourse (e.g. the discharge of silt-laden runoff) is avoided during the construction phase of the proposed development.*

*Recommendations for common toad, numbers of which were encountered during the reptile survey, are given within the Preliminary Ecological Appraisal report (Report ref: SE0714-03/I/01/JD).*

## 7.0 REFERENCES AND BIBLIOGRAPHY

BS42020:2013 Biodiversity. Code of practice for planning and development

Gent, T. and Gibson, S. (2003) Herpetofauna Workers Manual. JNCC.

Gent, T. and Howarth, W. (2003) Amphibians and reptiles and the law. Herpetofauna Workers Manual. JNCC.

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

APPENDIX 1: Location of artificial refugia tiles

