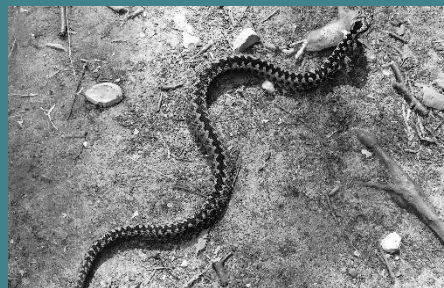


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Appendix 9.4: Reptile Survey Report

Client

Hallam Land

Project

**Hawkwell Village,
North-West Bicester**

Date

October 2025

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Figure 1: Reptile Survey Results Plan

Rev	Issue Status	Prepared/Date	Approved/Date
-	Draft	OJB / 08.10.2021	JD / 11.10.2021
A	Final	-	JD ./ 23.11.2021
B	Final	JSM / 26.09.25	JDH / 03.10.25
C	Final	JSM / 22.10.25	JDH / 22.10.25

1.0 NON-TECHNICAL SUMMARY

Report Scope and Methodology
<p>FPCR Environmental & Design Ltd. were commissioned by Hallam Land to undertake reptile surveys at Hawkwell Village, North-West Bicester to provide an ecological baseline for the application Site and determine presence or likely absence of reptiles.</p> <p>Proposals comprise a mixed-use development, with an extensive network of green infrastructure and public open space (outline planning application 21/04275/OUT).</p> <p>In total, 19 presence/absence reptile surveys were undertaken. Five were undertaken in September 2020, six were undertaken between May and July 2021, and eight were undertaken between May and September 2025.</p>
Survey Results
<p>The Site comprises primarily arable farmland with associated field margins, and a number of fields of species poor semi-improved and improved grassland which have been subject to grazing or silage production. Other habitats include areas of dense and scattered scrub, and a small area of bare ground with rubble piles. Hedgerows form the predominant boundary habitat and support frequent mature standards. Three small watercourses flow through the Site, two wet ditches and a single pond are present.</p> <p>A low population of grass snake have been identified onsite.</p>
Impact Assessment
<p>The proposals comprise losses of arable field compartments across the Site, which is not considered to pose a constraint as these areas are of very limited suitability for reptiles. Losses of grassland and field margins will reduce suitable habitat for reptiles across the Site.</p> <p>Green and blue corridors are proposed, including the retention and enhancement of linear features on Site, including watercourses, hedgerows, and parcels of woodland and scrub, which will improve the habitat suitability for reptiles and improve connectivity on and offsite.</p> <p>In the absence of mitigation, the proposals have the potential to lead to a short-term negative effect on reptiles where grassland is impacted. The vegetation clearance operations within arable field margins have the potential to harm reptiles.</p>
Recommended Mitigation, Compensation and Enhancement
<p>Vegetation clearance operations will be undertaken following a precautionary working method statement that will detail passive displacement measures that will allow reptiles to escape from working areas and find refuge in retained habitats.</p> <p>In addition to green infrastructure proposals that will benefit reptiles in the long-term, additional habitat creation measures will be employed which can include log piles for hibernation habitats.</p>

2.0 INTRODUCTION

- 2.1 The following Reptile Report has been prepared by FPCR Environment and Design Ltd. on behalf of Hallam Land, to support an outline planning application for land off, North-West Bicester (Central OS Grid Ref: SP 569 248) herein referred to as 'the Site'.
- 2.2 This Reptile Report provides update information supporting an Environmental Statement (ES) Chapter for the outline planning application (reference: 21/04275/OUT). This report updates and supersedes the previous version of the Reptile Report submitted in support for the application in 2021. The ES Chapter contains broader ecological information and assessment for the Site, and therefore, this report should be read in conjunction with it.

Site Location Context

- 2.3 The Site is dominated by arable cropland, with species poor semi-improved and improved grassland for grazing livestock, scattered scrub, hedgerows, and a small woodland block. Three small watercourses bisect the Site, one close to the Site's northern boundary, a second towards the southern end of the Site, and the third running north-south from the existing development to join River Bure at Lords Lane. Along these watercourse corridors there is a mix of dense and scattered scrub and standard trees.
- 2.4 The Site is bound by existing residential development to the north-east, the railway approaching Bicester North station to the south. The remaining perimeter of the Site is bound by existing agricultural boundaries.

Site Proposals

- 2.5 The Site is proposed as a mixed-use development, with an extensive network of green infrastructure and public open space included which provides opportunities for habitat mitigation and enhancements.

Report Aims and Objectives

- 2.6 The report has been prepared to achieve the following objectives:
- Summarise the survey and assessment methodologies employed in order to assess the importance of the Site for reptile species
 - Provide the desk study records of reptiles within a 1km radius of the Site
 - Provide the results of reptile surveys undertaken
 - Assess the likelihood of reptiles being present onsite and a population size estimate
 - Provide recommendations for avoidance, mitigation, compensation and/or enhancement to mitigate impacts of the proposals on reptiles

3.0 LEGISLATION

3.1 All widespread reptile species, including slow-worm *Anguis fragilis*, adder *Vipera berus*, common lizard *Zootoca vivipara* and grass snake *Natrix helvetica* are partially protected under Sections 9(1) and 9(5) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:

- Intentional killing and injury;
- selling, offering for sale, possessing, or transporting for the purpose of sale or publishing advertisements to buy or sell a protected species.

3.2 The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System, this states:

'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult English Nature [now Natural England] before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species' protection provisions affecting the site concerned.'

3.3 This partial protection does not directly protect the habitat of these reptile species. Where these animals are present on land that is to be affected by development, the implications of legislation are that providing that killing can reasonably be avoided then an operation is legal. Guidance provided by Natural England and the Amphibian and Reptile Groups of the UK recommends that this should be achieved by ensuring that:

- the animals are protected from injury or killing;
- mitigation is provided to maintain the conservation status of the species; and
- population monitoring is carried out subsequent to operations.

3.4 Reptiles native to the UK are also classified as a species of principle importance under the Natural Environment and Rural Communities Act 2006 (NERC).

4.0 METHODOLOGY

Desk Study

4.1 To compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:

- Thames Valley Ecological Records Centre (TVERC)
- Multi Agency Geographic Information for the Countryside (MAGIC - <https://magic.defra.gov.uk/MagicMap.html>)

4.2 Further inspection of colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk) was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

Reptile Presence/Likely Absence Surveys

4.3 Artificial refugia (0.5m² sections of roofing felt) were placed throughout the survey area at a density of 10 refugia per hectare of suitable reptile habitat. These habitats included the areas of grassland, along field margins, and around woodland edges. Refugia locations are shown in Figure 1.

4.4 Refugia were left to bed in for a minimum of 1-2 weeks. Then survey visits were undertaken by experienced FPCR ecologists following current guidelines^{1,2} and in suitable weather conditions (Table 1). These include air temperatures between 9-19°C in the absence of strong winds (Beaufort (BF) scale <4) and heavy rain. In total, 19 presence/absence reptile surveys were undertaken. Five were undertaken in September 2020, six were undertaken between May and July 2021, and eight were undertaken between May and September 2025.

4.5 Each survey visit included the following:

- Checking all refugia within the survey area at least once.
- Approaching refugia carefully from downwind and without casting a shadow so as not to disturb basking animals.
- Lifting and replacing refugia with care to check for the presence of reptiles underneath.
- Checking other suitable basking areas and resting places within the survey area, such as log piles.

Table 1: Reptile Survey Dates and Weather Conditions

Date	Time	Weather Conditions
1 st September 2020	07:34	20-30% cloud cover, 11°C, clear, 0 BF
4 th September 2020	16:30	30-40% cloud cover, 17°C, bright, 1-2 BF
7 th September 2020	16:17	80-90% cloud cover, 17°C, rain earlier in the day, 2-3 BF
15 th September 2020	08:08	0-10% cloud cover, 15°C, clear, sunny, bright, 0 BF

¹ Gent, T. & Gibson, S. (eds.) (2003) *Herpetofauna Workers' Manual*. JNCC, Peterborough.

² FrogLife (2016) *Surveying for reptiles: Tips, techniques and skills to help you survey for reptiles*. FrogLife, Peterborough.

Date	Time	Weather Conditions
21 st September 2020	09:03	70-80% cloud cover, 12°C, bright, 1-2 BF
19 th May 2021	10:04	30-40% cloud cover, 11°C, clear, bright, sunny, rain earlier in the day, 0 BF
25 th May 2021	17:03	30-40% cloud cover, 14°C, clear, bright, sunny, rain earlier in the day, 1-2 BF
2 nd June 2021	08:28	0-10% cloud cover, 15°C, clear, bright, sunny, 1-2 BF
15 th June 2021	18:42	10-20% cloud cover, 20°C, clear, bright, sunny, 1-2 BF
23 rd June 2021	18:25	0-10% cloud cover, 20°C, clear, bright, sunny, 1-2 BF
1 st July 2021	08:00	0-10% cloud cover, 19°C, clear, bright, sunny, 1-2 BF
17 th April 2025	16:01	70-80% cloud cover, 15°C, bright, sunny, rain earlier in the day, 1-2 BF
30 th April 2025	09:00	0-10% cloud cover, 14°C, bright, sunny, clear, 1-2 BF
9 th May 2025	09:46	0-10% cloud cover, 11°C, bright, sunny, clear, 1-2 BF
20 th May 2025	08:00	0-10% cloud cover, 10°C, clear, 0 BF
30 th May 2025	09:00	30-40% cloud cover, 16°C, bright, sunny, clear, 2-3 BF
2 nd September 2025	16:09	80-90% cloud cover, 18°C, rain earlier in the day, bright, 1-2 BF
15 th September 2025	08:06	20-30% cloud cover, 13°C, rain earlier in the day, clear, sunny, 1-2 BF
25 th September 2025	14:56	20-30% cloud cover, 17°C, clear, bright, sunny, 0 BF

Population Assessment

4.6 The reptile population was assessed in accordance with the Key Reptile Site Register criteria³. This system classifies populations of individual reptile species into three population categories according to importance (Table 2). These categories are based on the peak number of adults observed during individual surveys.

Table 2: Key Reptile Site Survey Assessment Categories (HGBI 1998)

Species	Low Population (No. of individuals)	Good Population (No. of individuals)	Exceptional Population (No. of individuals)
Adder	<5	5 - 10	>10
Common lizard	<5	5 - 20	>20
Grass snake	<5	5 - 10	>10
Slow worm	<5	5 - 20	>20

4.7 To qualify for the Key Reptile Site Register, the site in question must meet at least one of the following criteria:

- Supports three or more species
- Supports two snake species
- Supports an exceptional population of one species (see Table 2)
- Supports an assemblage of species scoring at least 4 (see Table 2)

³ Froglife (1999) *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Advice Sheet 10. Froglife, Peterborough.

- Does not satisfy the above four points but is of particular regional importance due to local rarity (for example e.g. adders are very rare in the East Midlands of England, therefore even 'low' populations should be designated as Key Sites).

Limitations

- 4.8 Four surveys were carried out in June and July 2021, outside of the optimal surveying period (April, May, and September). During these months, when air temperatures are warmer, reptiles are less likely to bask and may even seek shade. Of these four surveys, two were started when air temperature was 20°C, which is the upper threshold for survey suitability and therefore may impact the results of these surveys. An offsite incidental reptile sighting occurred during a survey carried out in June, as such showing the weather conditions were still conducive to identifying reptiles during the survey. The remaining 15 surveys undertaken between 2020 and 2025 were carried out in suitable weather conditions, and as such still fulfil a sufficient number of surveys to identify any reptiles onsite.
- 4.9 Refugia was also noted as missing or damaged during surveys, reducing the number of refugia per hectare of suitable habitat. This may have been caused by agricultural machinery, or the presence of livestock, or in some cases moved by individuals. Overall, the number identified as missing was relatively small, and absent refugia were replaced and left to bed for further surveys. This is not considered to pose a significant impact on the results.

5.0 RESULTS

Desktop Study

- 5.1 Consultation with TVERC identified 11 reptile records within 1km of the Site. No records were returned from within the Site boundary. The majority of the reptile records comprised common lizard, with one record of grass snake.
- 5.2 Desk study records of reptiles are summarised in Table 3, with details of other desk study records provided in the accompanying ES Chapter.

Table 3: Summary of Desktop Study Reptile Records.

Species	Location	Date of Record	Description
Common Lizard	730m S	1998	1 adult
Common Lizard	520m S	2002	C. 20
Grass Snake	850m SW	2003	1 adult
Common Lizard	950m SE	2016	8 records across 7 days in October totalling 8 female, 7 male, 8 adult, 18 juvenile
Common Lizard	950m SE	2017	1 female, 3 adult, 1 juvenile

Habitat Suitability Assessment

- 5.3 Some habitats onsite were identified as suitable for reptiles. These were small areas of scattered and dense scrub, and bare ground with rubble piles, as well as more significant linear features present across the Site, including field margins, hedgerows and watercourses. These provided connectivity with offsite habitats. Foraging, basking and commuting opportunities are therefore supported by the habitats onsite. The agricultural field compartments are considered low value for reptiles, generally lacking the varied vegetation structure suitable for cover, foraging and areas for basking.

Field Surveys

- 5.4 Locations of the 2025 survey reptile refugia and results are illustrated in Figure 1 and are summarised in Table 4. An incidental sighting of a grass snake was observed at a pond offsite, approximately 175m from the Site boundary to the north on 2nd June 2021. Two grass snakes were observed during a reptile survey on 9th May 2025.
- 5.5 Figure 1 shows that the grass snake sightings occurred at two locations: one to the southwest of the Site, within an interface area of dense scrub along a watercourse between two arable field compartments, and the second in the corner of an arable field to the east of the Site, next to one of the watercourses running along the northern boundary of the Site and within a small parcel of scattered scrub.
- 5.6 Reptile presence/absence surveys undertaken at the site have identified the presence of a low population of grass snake.
- 5.7 In accordance with Table 2 and associated Key Reptile Sites criteria, surveys have concluded that this site does not qualify as a Key Reptile Site.

Table 4: Summary of Reptile Survey Results

Date	Survey Results	Peak Count (Adults)
2 nd June 2021	Offsite incidental sighting of 1 adult grass snake (sex unknown)	Grass snake: 1
9 th May 2025	2 male adult grass snake	Grass snake: 2

6.0 DISCUSSION

6.1 The proposals will result in the loss of most arable fields from the Site and compartments of modified grassland; however existing hedgerows, woodland parcels and scrub will be retained, as well as grassland and arable fields present to the north and east of the Site. Green infrastructure (GI) is proposed, comprising attenuation ponds along the watercourses to the south and north of the Site, and scrub and woodland parcels proposed in areas to the northeast of the Site. The arable and grassland compartments to the east are proposed as public open space (POS).

Impact Assessment

6.2 Surveys have identified that the Site supports a low population of grass snake. When assessed against the criteria in Table 2, the populations identified onsite fall short of the threshold for a Key Reptile Site.

6.3 Site proposals will result in a loss of most arable and grassland compartments across the Site, excluding areas to the east and north. The small area of bare ground with rubble piles will be lost in the proposals. Significant GI is proposed along the watercourses, where areas of scrub and woodland are proposed creating green corridors through the Site. The habitats of the two locations where grass snakes were observed are retained in the proposals.

6.4 In the absence of mitigation, Site clearance works have the potential to result in the killing or injury of reptiles which, because of the protection afforded to them, will need to be avoided. The loss of the arable field interiors, however, are considered extremely unlikely to impact reptile populations given the limited suitability they offer to this species group.

6.5 To ensure the development is completed in accordance with the requirements of the Wildlife & Countryside Act 1981 (as amended) and the requirements of the NERC Act (2006), appropriate mitigation measures will be adopted as outlined in the following section.

Mitigation

Passive Displacement

6.6 In order to avoid breaching legislation protecting reptile species, a passive displacement exercise will be undertaken during the clearance of areas of suitable grassland, scrub and arable field margins.

6.7 The passive displacement exercise will include the following measures to minimise the risk of harm to any undetected reptiles:

- Clearance should be carried out in two stages: initially cutting vegetation to approximately 15 cm height, followed by a 24–48 hour pause before completing clearance to ground level. This allows any reptiles present to move away voluntarily.
- Works should be scheduled during the reptile active season, ideally in mid-summer (July–August), when reptiles are most mobile and able to relocate safely.
- Vegetation should be cleared directionally, moving towards retained or enhanced habitat areas to encourage natural dispersal.

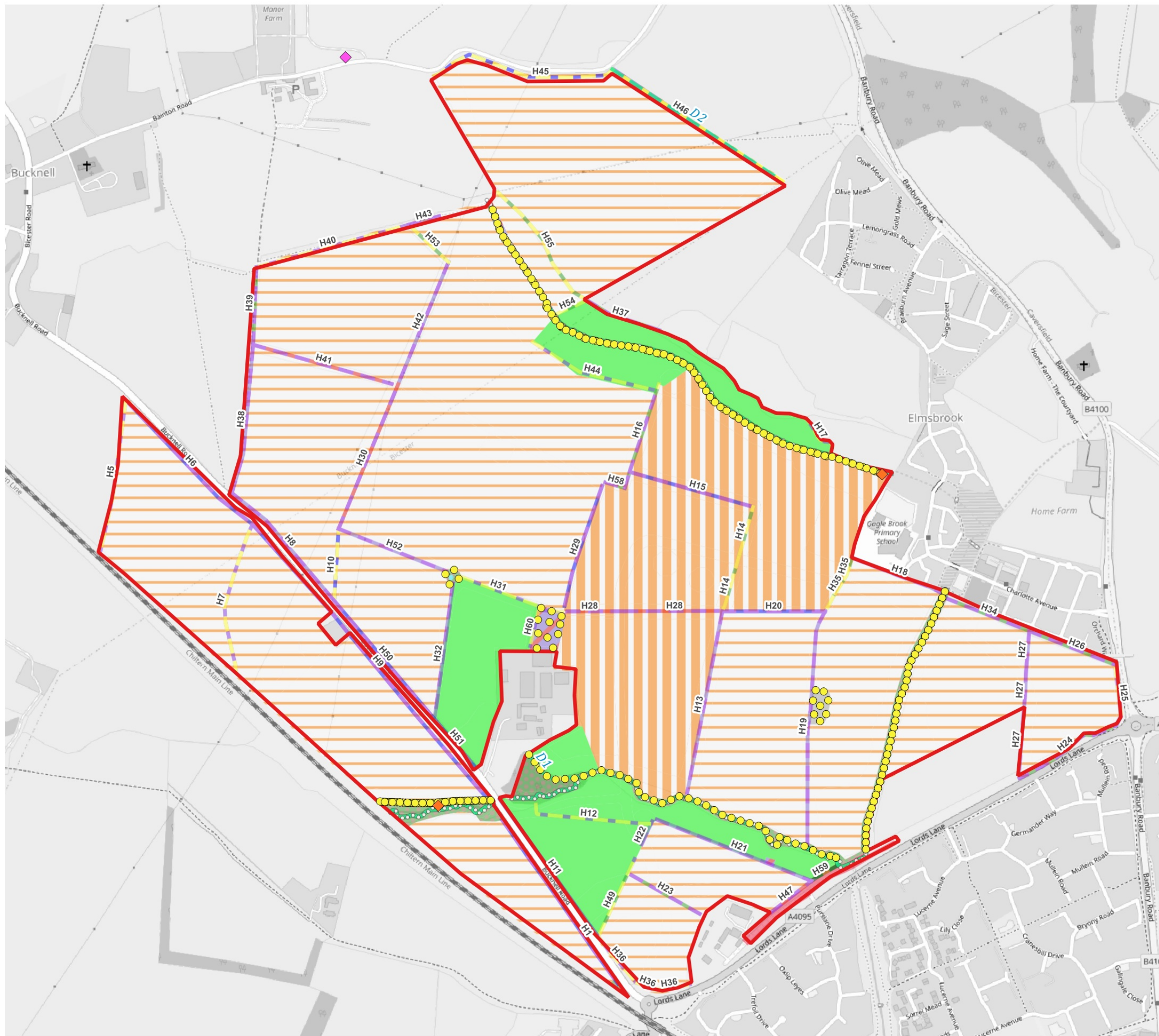
- Any areas of root systems, debris piles, or other features considered suitable refugia for reptiles will be fingertip searched by an ecologist and where possible dismantled by hand.
- An ecologist will be available on-call during clearance to provide guidance if reptiles are encountered.

Enhancements

- 6.8 While the proposed habitats establish there may be a short-term negative effect, however this is not considered to be significant as the positive impacts of the GI features will quickly establish to provide good quality habitat for reptiles.
- 6.9 New sustainable drainage system (SuDS) features and green corridors comprised of woodland and scrub will be designed in part for their biodiversity value. This will provide habitat for grass snake and form suitable compensatory habitat. Connectivity to suitable habitats on and offsite by linear features including watercourses and hedgerows will be maintained and reinforced by the proposals.
- 6.10 Further opportunities for enhancement can also be carried out through suitable woodland management, to create log piles providing hibernation habitats for reptiles.

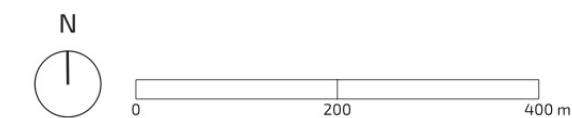
7.0 CONCLUSION

- 7.1 The surveys have demonstrated that the Site supports a low grass snake population.
- 7.2 The proposals will result in the loss of arable and grassland habitats which has low suitability for reptiles, but the potential to negatively impact reptile populations and to breach legislation protecting this species group.
- 7.3 Passive displacement measures will be carried out in order to minimise risk to reptiles during the construction phase and encourage movement of reptiles into suitable refuge away from the development area.
- 7.4 The POS and GI proposed as part of the development includes habitat creation and enhancement measures such as the retention of hedgerows and watercourses, providing suitable linear features to connect the optimal habitats on and offsite. The enhancement of scrub, creation of attenuation ponds and other SuDS features further develops the Site into a mosaic of habitats which will provide optimal breeding, foraging and shelter habitat for reptiles.
- 7.5 The proposals will therefore result in a positive impact on local reptile populations.



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- ▭ Site Boundary
- Reptile Refugia Location
- Reptile Survey Results**
- ◆ Reptile Sighting 2021
- ◆ Reptile Sighting 2025
- Habitats**
- ▭ Built linear features
- ▭ Cereal crops
- ▭ Mixed scrub
- ▭ Modified grassland
- ▭ Other woodland; broadleaved
- ▭ Ponds (priority habitat)
- ▭ Temporary grass and clover leys
- ▭ Tall forbs
- ▭ Non-native and ornamental hedgerow
- ▭ Native hedgerow
- ▭ Native hedgerow - associated with bank or ditch
- ▭ Native hedgerow with trees
- ▭ Species-rich native hedgerow
- ▭ Species-rich native hedgerow associated with bank or ditch
- ▭ Species-rich native hedgerow with trees
- ▭ Species-rich native hedgerow with trees associated with bank or ditch
- ▭ Ditches
- ▭ Other rivers and streams

date: 21/10/25 drwn/chkd: JSM / JH

client: **Hallam Land**
 project: **Hawkwell Village, North-West Bicester**

title: **REPTILE SURVEY RESULTS PLAN** scale: 1:7,500 @ A3

number: **FIGURE 1** rev: -

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