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Ecological Report

Reptile Survey

Land at:

Wellow Fields, Main Road, Wellow

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1. INTRODUCTION

1.1 **Background:**

1.1.1 I am instructed to carry out reptile surveys of land at Wellow Fields, Main Road, Wellow; where planning permission is being sought for residential development within the site. This report details the survey findings and includes guidance of any relevant mitigation measures that may be necessary.

1.1.2 The requirement for a phase 2 reptile survey originally followed a Preliminary Ecological Appraisal dated 10th May 2019 (ref. NN1098R01), with a reptile survey being carried out that summer. The reptile survey found evidence of a single grass snake on site. As of 2023, a new planning proposal is being drawn up for the site, and due to the time that has elapsed since the original surveys were undertaken, an updated PEA and reptile survey have been commissioned. This report details the results of the updated reptile survey.

1.1.3 This survey consisted of one visit to place refugia, followed by nine repeat survey visits, carried out by Andrew Southcott *BSc (Hons) ACIEEM*. Andrew is a qualified and experienced ecologist with over 16 years experience of surveying and working with protected species including reptiles, and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.2 **Site Description:** The site is located at OS grid reference SZ 38509 88094, measuring approximately 1.75ha as shown in Figure 1. The surveyed area is an agricultural field parcel of rank improved grassland. It is bounded to the N, S and W by native hedgerows, and by stock fencing along the E boundary. There is a partially wet ditch running S-N alongside the W boundary, which is very heavily obscured by dense ruderal and bramble scrub. There is also a public footpath running N-S along the field edge on its W side. The land does not appear to have been actively farmed for several seasons due to the development of ruderal and patchy scrub scattered across the interior, whilst the grassland is of a patchy but generally tall sward.

Figure 1. Aerial view of site outlined in yellow (Google Earth 2023)

2. METHOD

2.1 **Reptile Survey:**

2.1.1 Methods generally followed Gent and Gibson (2003) for herpetofauna studies based on the need for reptiles to bask in order to gain body warmth (reptiles are poikilothermic). A total of eighteen artificial refugia comprising 0.5 m x 0.5 m bitumen roofing felt squares were laid down on 20th July 2023. This number of refuges was chosen to evenly cover the available habitat within the site and provide a high confidence in likely absence, or for reptile presence an accurate picture of population abundance. It equated to a density of 10.6/ha for the whole site, which was above the minimum recommended survey density of 5-10/ha.

2.1.2 Refugia were placed in areas of suitable reptile habitat, including sunny open rough grassland boundaries (away from dense shade), and adjacent to scrub that could act as dispersal corridors and provide shelter. Appendix 1 shows the location of all artificial refugia included in this study.

2.1.3 Survey checks of the artificial refugia began on 3rd August and ended on 25th September 2022. Surveys were repeated at suitable times on the dates shown in Table 1. All artificial refugia were examined on each survey visit for evidence of reptile presence. All surveying was undertaken in suitable weather conditions, and there was no evidence of any refugia having been moved or otherwise interfered with during the study period.

2.2 **Limitations:** Please note that, because the natural environment is dynamic, ecological reports generally have a limited period of validity. Many statutory authorities now regard one year as the maximum time that should elapse before a report will need to be updated.

Any information relating to legal matters in this report is provided in good faith but does not purport to give any interpretation of the law whatsoever. Professional legal advice should always be sought. Any designs, advice, suggestions, or comments written or verbal relating to construction or supervision of building-related work of any kind are provided for consideration from an ecological viewpoint only.

3. RESULTS

3.1 Table 1 displays the survey results including the environmental conditions at the start of each survey.

Table 1. Summary of reptile survey results including environmental conditions.

		Weather conditions				
Survey date	Time	Temperature (°C)	Wind (Beaufort Scale)	Cloud cover (Oktas)	Recent Precipitation	Reptiles observed
03.08.23	09:45	17	2	7	Previous day	1 x juvenile slow worm (mat 7)
10.08.23	08:50	20	2	5	None	**1x adult grass snake** (mat 11) 1 x juvenile slow worm (mat 7)
16.08.23	08:30	18	0	1	None	0
24.08.23	08:40	19	2	7	Previous day	0
05.09.23	08:45	20	4	0	None	1 x juvenile slow worm (mat 15)
12.09.23	08:45	19	2	7	Overnight	2 x juvenile slow worms (mats 1 & 3)
15.09.23	09:00	16	0	1	None	1 x juvenile slow worm (mat 15)
18.09.23	09:15	17	4	7	Previous day	1 x juvenile slow worm (mat 3)
25.09.23	08:50	17	2	3	Overnight	2 x juvenile slow worms (mats 1 & 4)

3.2 All surveys were undertaken in suitable conditions and the correct survey effort was employed for the time of year. During each survey visit, all artificial refugia were examined for reptile presence. Open ground was walked carefully in order to observe any potential reptiles basking in the open.

3.3 Slow worm and grass snake were the only reptile species recorded during the study, with all sightings being recorded from under artificial refugia. **The peak adult reptile count was ONE**. This occurred on 1 visit as shown in Table 1, for grass snake only. For slow worms, only juveniles were recorded during the surveys.

3.4 Froglife (1999) provides a means of evaluating reptile populations based on survey results using a density of 10 refuges per hectare. “Low”, “good” or “exceptional” populations are based on numbers of *adult reptiles recorded by one surveyor in one visit* (see Table 2). Using this method it is therefore considered that a **low** population of grass snake is currently present. Although no adult slow worms were recorded, the presence of several juveniles (maximum count of 2) shows that this species is also present, although again as part of a low population.

Table 2. Reptile population assessment *Froglife* (1999) - *number of adult reptiles recorded by a surveyor in a single visit*.

Species	Low Population (score 1)	Good Population (score 2)	Exceptional Population (score 3)
Grass snake	<5	5-10	>10
Adder	<5	5-10	>10
Slow worm	<5	5-20	>20
Viviparous lizard	<5	5-20	>20

3.5 Given that the density of refugia used during this survey was above the minimum recommended guidelines of 5-10/ha, the observations are considered to provide an extremely accurate representation of use of the habitats within the site boundary by reptiles, and therefore a strong confidence in the overall population assessment.

3.6 Table 2 is also used to assess whether a site qualifies as a "Key Reptile Site" as defined by Froglife (1999). For a site to qualify for the Key Reptile Site Register it must meet at least one of the following criteria:

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

It is clear from this survey that this site **does not qualify** as a Key Reptile Site.

4. DISCUSSION AND RECOMMENDATIONS

4.1 **Summary of findings**:

4.1.1 Slow worm and grass snake were recorded during this survey, limited to a maximum of one adult (grass snake only) on one visit. Both of these species are widespread and common lowland reptiles that occur in a variety of habitats including rough grassland and farmland. Grass snakes also have a strong association with wetlands, and are highly mobile species occupying large home ranges and will migrate through relatively poor quality habitat to reach favoured egg-laying, foraging or hibernation areas (movements >100m per day are likely).

4.1.2 The previous reptile survey in 2019 also found a single adult grass snake, although no slow worms were present at that time. Since then, in the last couple of years it appears that the field has been left unmanaged and undisturbed, resulting in development of varied rough grassland, ruderal and low scrub development encroaching into the field from its boundaries. As slow worms thrive in these kinds of structurally varied habitats, this likely explains why their presence has now been confirmed whereas they were previously absent.

4.1.3 The very low numbers observed for both species are too low to sustain discrete populations, and indicate that the individuals likely form part of a wider population occupying the surrounding landscape; using these field edges and hedges for movement, cover and foraging. The presence of juveniles show that a breeding slow worm population is present nearby, although no such evidence exists for grass snake.

4.2 **Implications:**

4.2.1 All reptiles are protected by specific legislation which makes it illegal to intentionally or recklessly kill or injure any native reptile (see Appendix 3). Furthermore, all protected species must be given due consideration under the National Planning Policy Framework (NPPF) 2012, which places responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments. As a protected species has been confirmed at this site, it is necessary to consider mitigation as part of the proposed development, appropriate and proportionate to the species and population level, in order to prevent committing an offence under the Wildlife and Countryside Act 1981.

4.2.2 Mitigation must be fit for purpose in protecting reptiles from harm that may arise in connection with development of the site, and ensure that there is no net loss of local reptile conservation status. In the absence of appropriate mitigation measures, it is possible that site development could result in death and/or injury of reptiles if they are present when clearance takes place. The following recommendations therefore include Reasonable Avoidance Measures (RAMs), in order to minimise impacts and avoid the risk of an offence being committed.

4.3 **Recommendations for mitigation:**

4.3.1 Given that very low numbers of reptiles were present, it is likely that the overall population nearby is small and/or spread out over a much larger area of agricultural land. Furthermore, as the proposed scheme will be limited to partial development of the site, retaining between ⅓ and ⅔ of the overall site (although finalised proposals are not known at the time of writing); there will be no necessity for full translocation as long as recommendations are put in place to meet best practice, ensure observance of regulations, and maintain favourable conservation status.

4.3.2 Where low numbers of a widespread reptile species occurs, and where the site will retain suitable habitat, a proportionate approach to mitigation would be to carry out phased site clearance to displace reptiles to safe ground within the overall site, combined with exclusion measures to ensure they do not re-enter the construction zone during the development phase. Furthermore, landscape enhancement measures should be provided as part of an approved scheme to compensate for the partial loss of habitat on site. This approach aligns with standing advice that advocates favoured relocation to an on-site or adjoining receptor to ensure that their population is not fragmented, thus maintaining the local reptile conservation status.

4.3.3 The final details of required mitigation will be dependent on the extent of the approved scheme, and would be secured via a reptile mitigation strategy as a condition of planning approval. At this stage, the following broad method for phased clearance and exclusion is proposed in order to comply with reptile legislation:

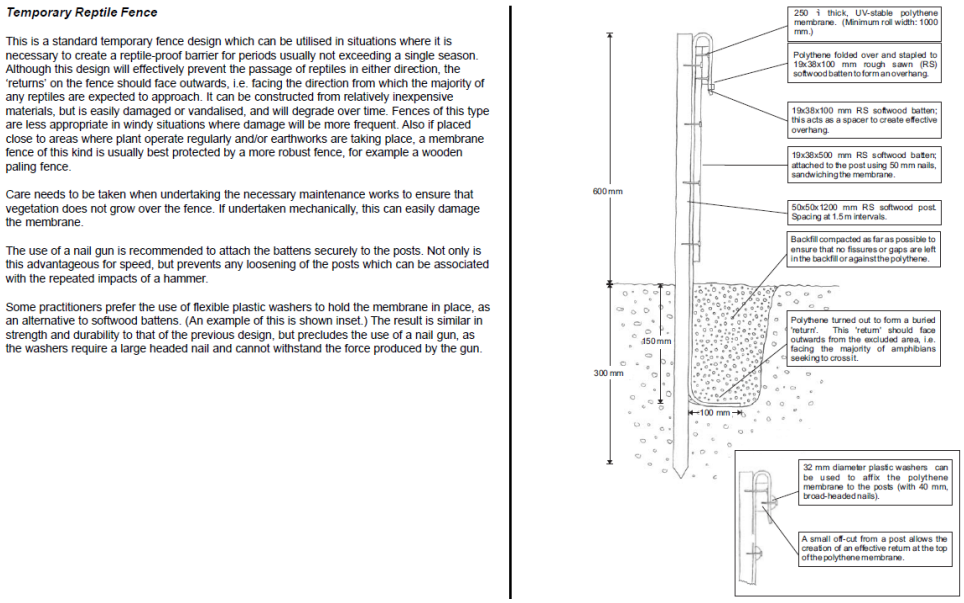
- Prior to the site being prepared for development, a two-stage clearance of all required vegetation should be undertaken. The first stage will involve cutting the vegetation to a height of 10cm and removing arisings. The height of the cut ensures reptiles are not harmed, but deprives them of cover, encouraging them to leave the area of their own accord. Cutting must be undertaken directionally, working from the N roadside boundary southwards towards retained on-site habitat and connectivity

to the wider landscape. Following the first cut, some artificial refugia should be placed out which would attract any reptiles that may be slow to disperse. Immediately prior to the second cut, the refugia must be checked and removed by an ecologist, and any reptiles found must be translocated to retained vegetation cover outside the development zone.

- The second stage would be clearance to ground level, carried out a minimum of 48 hours after the initial cut to allow time for dispersal of reptiles and checking of refugia; but within 1 week of the first cut. All clearance must occur when reptiles are active during suitable warm and sunny weather conditions, fully outside of hibernation periods (mid-October to mid-March). Clearance of any logs/brash on site must be undertaken by hand. Site clearance should be undertaken with care in the presence of an experienced reptile worker so that any animals disturbed can be immediately removed to the retained cover of perimeter vegetation.

- Once the site is lacking suitable vegetation cover, this minimises the risk of reptiles returning to site. However, to fully account for this possibility temporary reptile exclusion fencing should then be erected for the duration of the construction phase, alongside the retained W, E & S boundaries and adjacent internal scrub, ruderal, grassland and ditch habitats. Precise details of the fencing route would be dependent on the approved scheme.

- Fencing can consist of a polythene sheet barrier, dug into a 200mm trench and backfilled to form a secure ground level barrier to prevent burrowing. Stakes, at c.1.8m spacing should be driven in and the sheeting attached with clout nails & washers to form a rigid vertical barrier (3 fixings per post). Allow for a minimum 100mm under-lap of polythene in the base of the trench. Along the top, allow 150-200mm of polythene to create a roll. This adds strength to the top fixing point, and creates an overlap which cannot be scaled by reptiles. The overall height of the fence should be approximately 600mm above ground level. A visual example of a suitable design for exclusion fencing is provided in Figure 2 below.



Temporary Reptile Fence

This is a standard temporary fence design which can be utilised in situations where it is necessary to create a reptile-proof barrier for periods usually not exceeding a single season. Although this design will effectively prevent the passage of reptiles in either direction, the 'returns' on the fence should face outwards, i.e. facing the direction from which the majority of any reptiles are expected to approach. It can be constructed from relatively inexpensive materials, but is easily damaged or vandalised, and will degrade over time. Fences of this type are less appropriate in windy situations where damage will be more frequent. Also if placed close to areas where plant operate regularly and/or earthworks are taking place, a membrane fence of this kind is usually best protected by a more robust fence, for example a wooden paling fence.

Care needs to be taken when undertaking the necessary maintenance works to ensure that vegetation does not grow over the fence. If undertaken mechanically, this can easily damage the membrane.

The use of a nail gun is recommended to attach the battens securely to the posts. Not only is this advantageous for speed, but prevents any loosening of the posts which can be associated with the repeated impacts of a hammer.

Some practitioners prefer the use of flexible plastic washers to hold the membrane in place, as an alternative to softwood battens. (An example of this is shown inset.) The result is similar in strength and durability to that of the previous design, but precludes the use of a nail gun, as the washers require a large headed nail and cannot withstand the force produced by the gun.

Figure 2. Example specification for standard temporary reptile exclusion fencing

4.3.4 The above reptile mitigation measures should be applied in conjunction with general recommendations as proposed in the PEA, to avoid harm to protected wildlife and contribute to a net enhancement of local biodiversity through a suitable landscaping scheme agreed as part of the development. Given the confirmed presence of reptiles on site, species-specific compensation measures should also be included to off-set habitat loss as a result of the development. This should include new native hedgerows, wildflower-rich grassland buffer and several reptile hibernacula, located with connectivity to the retained S & W boundary vegetation. Again, final details of locations and specifications would be dependent on the approved layout and supplied as a condition of planning approval.

4.3.5 It is concluded that the proposed combination of reptile mitigation and compensation measures will ensure the protection of species during construction, whilst allowing for their retention in suitable on-site habitat as well as continued connectivity to the wider off-site populations.

5. REFERENCES

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- Gent, A.H., and Gibson, S.D., *eds* (2003). *Herpetofauna workers' manual.* Joint Nature Conservation Committee, Peterborough.
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Appendix 1 - Reptile Survey Site Plan

Legend

Artificial refugia location (with number)

Artificial refugia with confirmed reptile presence (with number)

Appendix 2 - Site Photos


Mat 1 (left) and mat 4 (right) along the N boundary in habitat that would be removed as part of the development; both with confirmed presence of juvenile slow worms.


Mat 11 (left) and mat 15 (right) near S boundary on land that will be retained; both with confirmed reptile presence (grass snake at mat 11 and juvenile slow worm at mat 15).

Appendix 3 - Reptile Legislation & Conservation Status

All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The adder, common lizard, grass snake and slow worm are fully protected under this legislation. In addition, the sand lizard and smooth snake also receive a higher level of protection under Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (as amended) making them European Protected Species.

Common lizard and slow-worm are widespread and still common throughout much of England, in a wide variety of habitat types. The grass snake is still fairly common throughout most of southern England and parts of lowland Wales but is rarer further north. The adder (or viper) has become much less common in recent years but is still frequent in some areas of Britain (Beebee & Griffiths 2000). The Wildlife and Countryside Act 1981 (as amended) provides protection for the slow-worm, common lizard, grass snake and adder from deliberate killing and injury. Sale and related commercial activities are also proscribed.

The other British species, smooth snake and sand lizard, are rare, with restricted distributions mainly in parts of southern England, although not the Isle of Wight (Beebee & Griffiths 2000). They enjoy significantly stricter legal protection than the commoner species above.

Edgar, Foster & Baker (2010) note declines in all the common reptile species in Britain in recent years, in some places severe. Factors may include:

- Habitat and micro-habitat degradation;
- Changes in land use such as agriculture and development;
- Fragmentation of habitats and population isolation;
- Ecological succession;
- Predation by domestic cats (and pheasants) and disturbance by dogs;
- Fire (especially moors and heaths);
- Inappropriate conservation/habitat management;
- Overgrazing;
- Invasive exotic plant species;
- Damage to habitats by excessive visitor pressure/off-road vehicles;
- Deliberate killing by people, especially adder, grass-snake and slow-worm.