ECOLOGICAL EXPERTISE, EVOLVED

Blackthorn Farm, Culverstone Green

Herptile Survey Report

Prepared on behalf of

Esquire Developments Ltd

Final Report

17 September 2025

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Blackthorn Farm, Culverstone Green

Herptile Survey Report

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Executive Summary

Ecological Planning & Research Limited conducted a reptile survey in relation to the Proposed Development on land at Blackthorn Farm, Culverstone Green.

Seven reptile visits were conducted in May and June 2025. One juvenile Grass Snake was recorded. The reptile assemblage is of ecological importance at the **ZoI Level** only.

In addition to the reptile survey, there is one pond 250m of the Site. However, it is located outside of the Site and permission to survey the pond for Great Crested Newt was not obtained.

Details associated with impact avoidance and mitigation will be detailed in the associated Ecological Impact Assessment (EcIA) in due course.

Blackthorn Farm, Culverstone Green
Herptile Survey Report

1. INTRODUCTION

1.1 Ecological Planning & Research Limited was commissioned by Esquire Developments Ltd to conduct a reptile survey in relation to the Proposed Development on land at Blackthorn Farm, Culverstone Green (hereafter referred to as 'the Site').

1.2 The instruction also included eDNA surveys for Great Crested Newt *Triturus cristatus* if access to an off-site pond could be obtained.

1.3 **Figure 1** shows location of the Site.

Relevant Legislation

1.4 **Appendix 1** provides further detail:

- The Environment Act 2021;
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Countryside and Rights of Way (CROW) Act 2000; and
- The Natural Environment and Rural Communities (NERC) Act 2006.

Likely Biophysical Changes

1.5 Biophysical change means an *"… alteration in biological and/or physical conditions of the environment (e.g. changes in the atmospheric concentration of carbon dioxide, altered soil pH or change in the frequency of a plant species in an area)"* (CIEEM, 2018).

1.6 The predicted biophysical changes that could be generated from the Proposed Development and be of relevance to breeding birds are detailed in **Table 1.1**, along with their likely Zone of Influence (discussed further below).

Table 1.1: Activities and Biophysical Changes associated with the Proposed Development that may give rise to ecological impacts to reptiles and amphibians, and the associated Zone(s) of Influence.

Activity	Potential Impacts	Zone of Influence
Site Clearance and Construction Phase		
Vegetation clearance and ground works	Loss and fragmentation of suitable habitat; including foraging, basking, shelter and hibernacula. Direct harm or death of individual animals.	Site and areas within 400m of it.
Drainage	Change of groundwater flows and/or water quality, that may in turn affect suitable habitat.	The Site and immediate surrounds.
Access and travel on / off the Site	Disturbance to animals (e.g., via ground vibration).	The Site and locations around access points.
Assembly and storage areas for machines, materials and construction compounds	Loss and fragmentation of suitable habitat, including foraging, basking and/or hibernacula. Direct harm or death of individual animals. Disturbance (e.g., via ground vibration).	The Site and locations around access points.
Construction of new roads and buildings	Habitat fragmentation.	The Site and immediate surrounds in the most part.
Creation of new habitats through implementation of a soft landscaping scheme	Beneficial impact from the creation of new habitat, including ponds.	Site and areas within 400m of it.
Operational Phase		
Access and travel on / off the Site, including increased number of people visiting the Site for recreational purposes.	Disturbance (e.g., increased interactions with people and their pets). Potential increase in mortality rates from increased access, interactions with people.	Site and areas within 400m of it.
Occupation of new houses: urban effects	Disturbance. Loss and fragmentation of habitats by trampling. Degradation and pollution of habitats through urban effects (such as fly tipping and introduction of non-native species).	Site and areas within 400m of it.
Implementation of habitat management plans	Enhancement of existing habitats and beneficial management of new habitats.	Site and areas within 400m of it.

Zone of Influence

1.7 The Zone of Influence (ZoI) of a proposed development is defined by the Guidelines for Ecological Impact Assessment (EcIA) as "… *the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities*" (CIEEM, 2018).

1.8 If reptiles are present, and if Grass Snake *Natrix Helvetica* is also present, the ZoI may extend further than 300m to 400m because this species has a relatively large home range.

1.9 Recreational disturbance arising from new residents, such as dogs off leads, and increased predation rates from domestic cats, is likely to extend beyond the Site boundary. In the latter case, there is evidence cats have a home range of approximately 300m to 400m (Thomas, *et al.,* 2014). This is of importance because cats predate reptiles.

1.10 It is generally considered that Great Crested Newt will use terrestrial habitat within 250m (English Nature, 2004; Langton *et al*., 2001), and potentially up to 500m from a breeding pond (English Nature (now Natural England), 2001). Therefore, Great Crested Newt in a pond within 500m of the Site and not isolated by barriers to movement could be affected by the proposed development in the absence of mitigation. However, surveys at a distance greater than 250m from a pond are necessary only when the following conditions are met (Natural England, 2015).

- Maps, aerial photos, walk-over surveys, or other data indicate that the pond(s) has potential to support a large Great Crested Newt population.
- The footprint contains particularly favourable habitat for Great Crested Newt, especially if it constitutes the majority available locally;
- The development would have a substantial negative effect on that habitat; and
- There is an absence of dispersal barriers.

1.11 However, Great Crested Newts are most commonly found within 100m of water bodies, and in particular at distances of 50m or less from ponds (English Nature, 2001, 2004; Natural England 2015). Furthermore, the likelihood of newts being present in terrestrial habitat decreases as the distances from a water body increase beyond 100m. Some studies indicate the probability of Great Crested Newts being present markedly decreases at distances beyond 150m (Jehle and Arntzen, 2000) and/or at distances of 200m (English Nature, 2004). Therefore this, and the Survey Guidance Table contained within the Great Crested Newt Method Statement, which is used when making an application for a European Protected Species Licence (EPSLs), has also been used to inform the likely ZoI (as well as the scope of survey work and mitigation measures).

1.12 The ZoI of the Proposed Development associated with Great Crested Newt is, for the purpose of this assessment, likely to extend to a '250m buffer' beyond the Site.

1.13 Major roads (such as motorways and major A-roads) are likely to act as dispersal barriers to Great Crested Newt (Oldham *et al.,* 2000). However, any ponds and other waterbodies on the opposite side of the A227 to the Site cannot be 'scoped out' from further survey work as the A227 would not be considered a busy enough road to create a complete barrier to the dispersal of Great Crested Newt.

1.14 The ZoI will also extend to those locations where off-site impacts might occur. Further details will be provided in the EcIA report in due course.

Survey Objectives

1.15 The objectives of the survey and report are to:

- Identify suitable reptile and Great Crested Newt habitat within the Site;
- Assess the use of the Site by reptiles;
- Report the results of the reptile survey; and
- Assess the ecological importance of the Site for reptiles and Great Crested Newt.

2. METHODS

Desk Study

2.1 A biological records data search was commissioned from Kent and Medway Biological Record Centre (KMBRC) pm 5th March 2025. It included bird records within a 2km radius of the Site.

2.2 In addition, the Government's Multi-Agency Geographic Information for the Countryside (MAGIC) was used to look for records of granted European Protected Species Mitigation Licences within 5km of the Site associated with Great Crested Newt.

Field Survey

Habitat Assessment

2.3 The habitats were assessed for their suitability for reptiles and amphibians by Senior Ecologist Sean Manley BSc (Hons) during the Preliminary Ecological Appraisal.

Reptile Survey

2.4 The reptile survey was based on that detailed in Gent and Gibson (2003), Sewell *et al*., (2013) and Froglife (1999; 2016).

2.5 This involves the use of artificial refuges made of corrugated metal, roofing felt, or other suitable materials distributed in areas likely to support reptiles. These refuges absorb and retain radiant heat more readily than the surrounding ground or vegetation and often act as 'magnets' to animals in the immediate vicinity because favourable microclimates are created beneath them and/or adjacent to them. Cold-blooded reptiles will therefore shelter underneath these refuges and regulate their core temperature whilst safe from disturbance or predation.

2.6 Refuges are particularly effective for locating species of snake Serpentes sp. and Slow-worm *Anguis fragilis*. Whilst refuges are less effective for locating Common Lizards *Zootoca vivpara*, animals will still use them. However, careful visual surveys, by experienced surveyors, was also used to look for animals.

2.7 A total of 44 refugia comprising 22 felt, 16 onduline and six tin were placed in suitable habitat on the 8th April 2024 (see **Figure 2**). To allow reptiles time to find the refugia they were left to "bed-in" for two weeks prior to the first survey. Surveys were scheduled to coincide with suitable weather conditions and ambient temperatures and were spread over the period May to June.

2.8 Froglife (1999) advises that refugia are deployed at a density of 5-10 per hectare, which would equate to 55 refugia if the entire the Site were suitable habitat. However, most of the Site comprises grazed horse paddocks and therefore it is not suitable. Therefore, 44 refugia were considered sufficient.

2.9 Seven visits were completed to establish presence / likely absence, and survey dates, times and weather conditions are provided in **Table 3.1**

2.10 Survey visits were conducted by Becky Sanders BSc (Hons), Jonathan Singlewood-Dodds BSc (Hons), Josh Kinal BSc (Hons) and Rhys Davies BSc (Hons).

Table 3.1: Survey visit dates, times and weather conditions

Visit No.	Date	Start Time	End Time	Start Temperature (°C)	End Temperature (°C)	Wind (Beaufort Scale)	Cloud Cover (%)	Rain
1	13/05/2025	08:00	09:16	14	15	1	0-15	No
2	19/05/2025	09:34	10:40	12	13	2	100	No
3	22/05/2025	16:15	17:15	13	13	1	100	No
4	28/05/2025	08:18	08:57	14	16	2	50	No
5	06/06/2025	08:45	09:30	15	16	2	75	No
6	10/06/2025	08:40	09:47	15	16	1	100	No
7	20/06/2025	08:00	11:00	19	20	1	30	No

2.11 A commonly used method for interpreting reptile survey data is detailed in Froglife (1999), from which **Table 3.2** is taken. The numbers in the Table refer to the maximum numbers of adults recorded in one visit, when using walked transect observations and artificial refuges (at a density of 10/ha).

2.12 These Froglife (1999) guidelines, however, need a degree of interpretation because they do not consider the size of the survey area, or the localised distribution of reptiles within a survey location.

Table 3.2: Population Size Class Interpretation (Froglife, 1999). Numbers refer to the number of adults (not sub-adults and juveniles) recorded.

Species	Low Population	Good Population	Exceptional Population
Slow Worm	*<5*	5-20	>20
Common Lizard	<5	5-20	>20
Grass Snake	<5	5-10	>10
Adder	<5	5-10	>10

Great Crested Newt Survey

2.13 Two letters were sent to the landowner of Pond 1 (see **Figure 4** the location). These were sent using recorded delivery and asked for permission to survey the pond for the presence of Great Crested Newt. The letters included the inclusion of stamped addressed envelopes to make responding easier. The letters were sent two weeks apart.

2.14 No response was received from either letter. Consequently, it was presumed access to survey Pond 1 had not been obtained. Therefore, no further assessment work could be completed.

Ecological Evaluation

2.15 The importance value used in this report is based on the recommended geographical context. For the purposes of this assessment, the following geographical contexts are used; ZoI, Local, County, Regional, National, United Kingdom, European or International level.

2.16 The content detailed in the criteria for Local Wildlife Sites (LWS) in Kent (KWT, 2024) can be readily applied to the evaluation of reptile and amphibian assemblages within Kent. In the criteria, 'good' or 'exceptional' populations/assemblages score at least 4 (see Kent Wildlife Trust 2024), and the Kent-based criteria are based upon nationally recognised scoring systems (such as that used by Froglife).

2.17 When appropriate, and if reptiles are present, the criteria associated with 'Key Reptile Sites' (as per Froglife Advice Sheet 10 can be used. However, in this instance, because only one sub-adult Grass Snake was recorded, this evaluation framework was not used.

Considerations

2.18 On four of the seven visits, not all areas of the Site could be accessed because of the presence of 'yearling' horses, and it was not safe to enter fields when these animals were present.

2.19 Access to the off-site pond was not obtained, and therefore survey work could not be conducted.

3. RESULTS

Desk Study

3.1 The KMBRC biological records search for reptiles returned one record of Common Lizard within 2km of the Site from 2010.

Habitat Assessment

3.2 The Site provides suitable habitat in the field margins where the grassland meets the woodland / scrub habitat. In some locations, there were also suitable, natural refugia. For example, between the stables and the grazed fields.

3.3 **Figure 2** details the location of suitable reptile habitat and this is where refugia were deployed within the Site.

Field Survey

3.4 Whilst no adult reptiles were recorded across the entire survey, one juvenile Grass Snake was recorded on 20th June 2025 under refugia 12 (see **Figure 3a** for location).

3.5 No other reptiles or amphibians were recorded during the survey, nor were any animals recorded during survey work for other ecological features.

Amphibians

Desk Study

3.6 The KMBRC biological records search returned three records of Common Toad *Bufo bufo* within 2km of the Site, with one recorded in 1993 and the remaining two in 2010. Both records occurred south of the Site.

3.7 Common Frog *Rana temporaria*, Palmate Newt *Lissotriton helveticus*, and Smooth Newt *L. vulgaris* have been recorded south of the Site also.

3.8 No records of Great Crested Newt or associated licence data were returned within 2km of the Site. The Site also lies with the 'Green Zone' associated with the Kent Great Crested Newt Risk Zones. This means there is a low risk of Great Crested Newt presence.

4. ECOLOGICAL EVALUATION

4.1 The reptile assemblage is of ecological importance at a **ZoI Level** only. Mitigation associated with the legal protection afforded to reptiles will be detailed in the associated EcIA report in due course.

4.2 Great Crested Newt are unlikely to occur within the landscape surrounding the Site and there are relatively few amphibian records nearby.

4.3 Recommendations associated with ecological mitigation, because of the legal protection afforded to reptiles and Great Crested Newt, is provided in the associated Ecological Impact Assessment report.

5. REFERENCES

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Figures

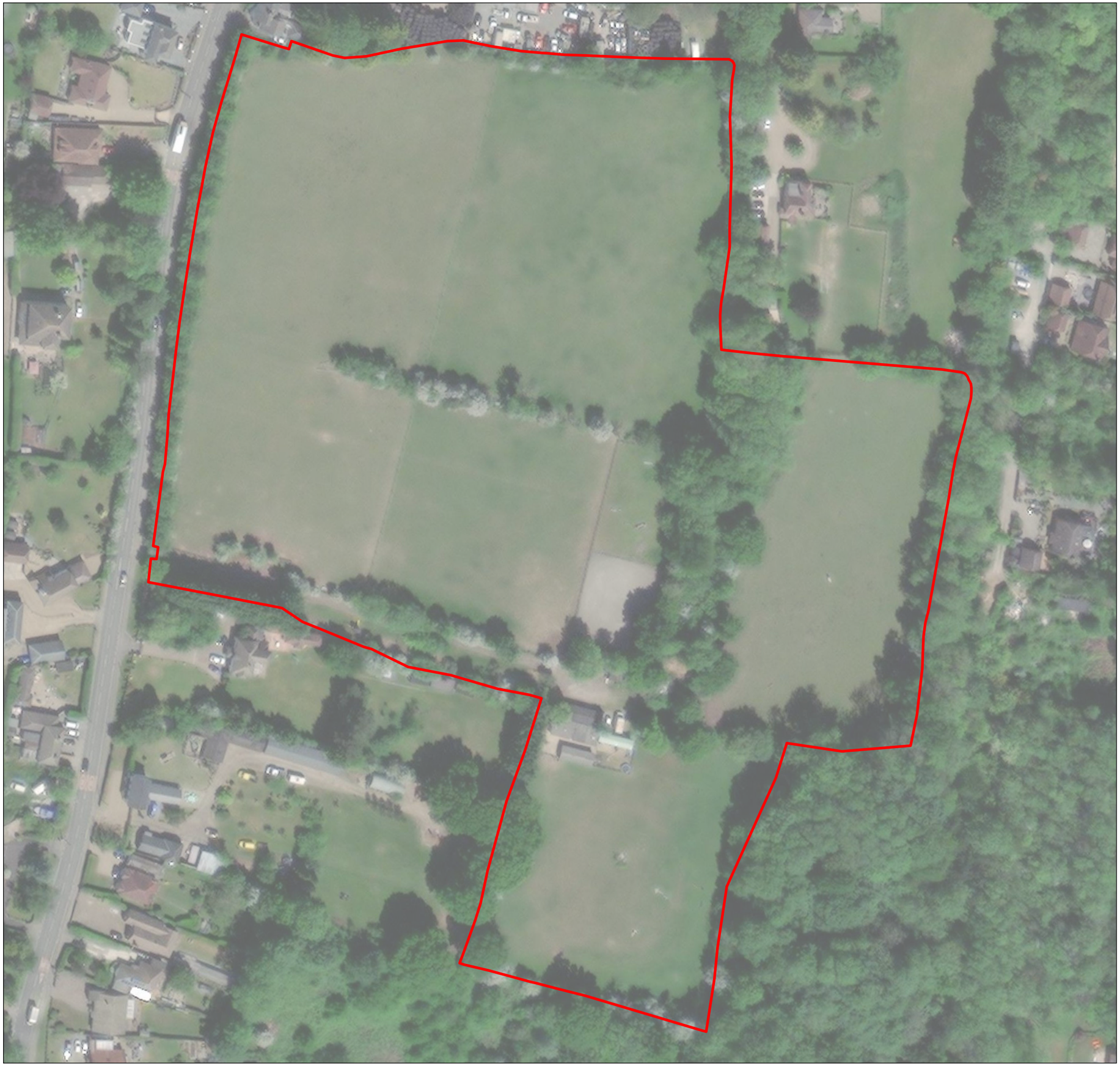

Figure 1 Site Location

KEY

Site boundary

SCALE: 1:1,250 at A3

0 10 20 30 40 50 Metres

N

EPR

CLIENT: Esquire Developments Ltd

PROJECT: Blackthorn Farm, Meopham - Further Surveys

DATE: 30 July 2025

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P32/74

Aerial Image: Maxar, Microsoft

Figure 2 Location of Reptile Refugia and Suitable Habitat

KEY

Site boundary

Reptile Refugia

- Felt
- Onduline
- Tin

Reptile Suitability

- Optimal
- Suboptimal
- Not Suitable

SCALE: 1:1,250 at A3

0 10 20 30 40 50 Metres

N

EPR

CLIENT: Esquire Developments Ltd

PROJECT: Blackthorn Farm, Meopham

DATE: 30 July 2025

Y:\Blackthorn Farm, Meopham 3274\GIS\Reptiles\Figure2_Reptile_Refugia_and_Suitability_P3274_3892_300725.aprx

P32/74

Aerial Image: Maxar, Microsoft

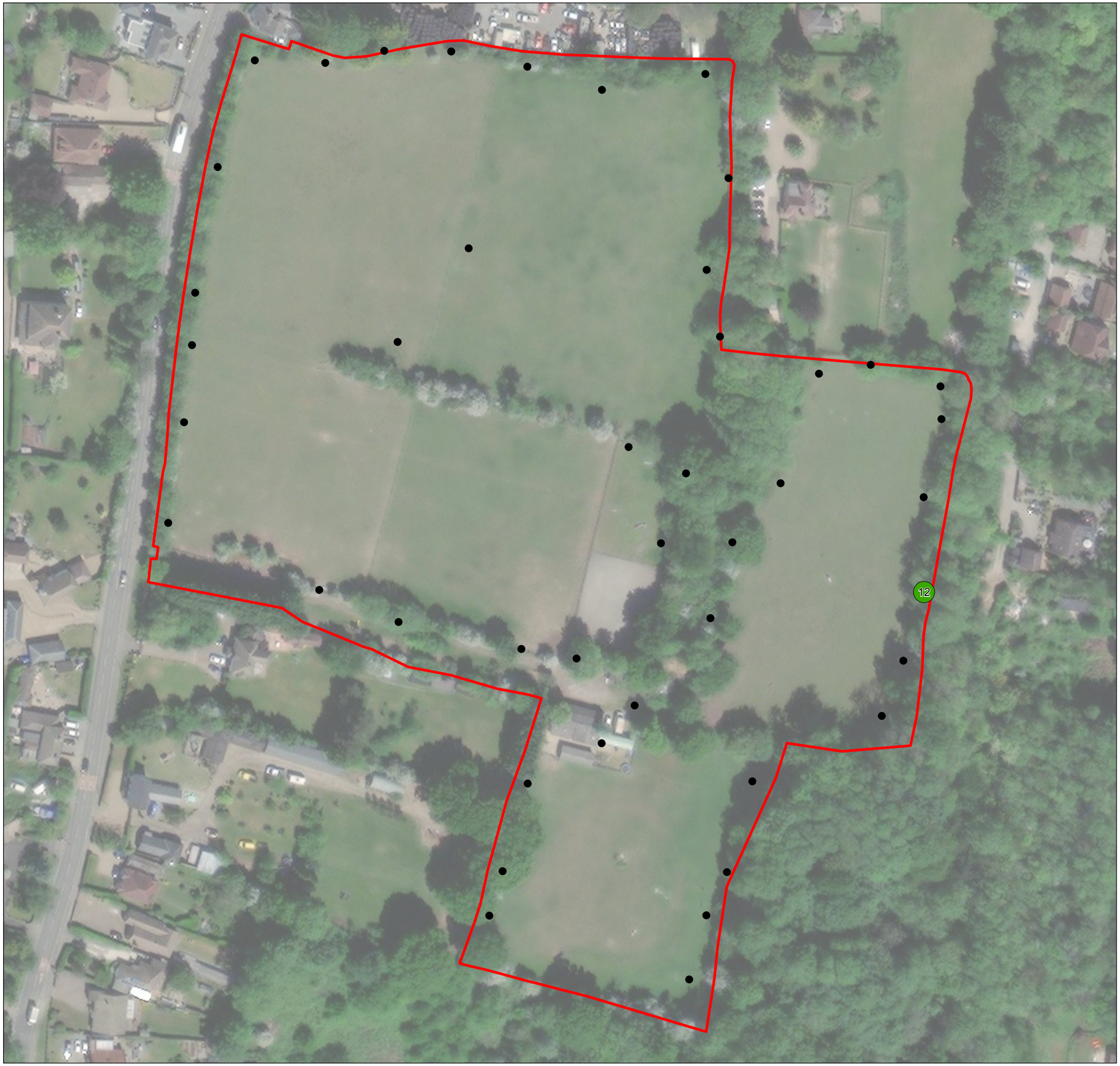

Figure 3 Survey Results

KEY

Site boundary

Grass snake

Refugia

SCALE: 1:1,250 at A3

0 20 40 60 80 Metres

N

EPR

CLIENT: Esquire Developments Ltd

PROJECT: Blackthorn Farm, Meopham - Further Surveys

DATE: 30 July 2025

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Aerial Image: Maxar, Microsoft

Figure 4 Waterbody Locations

KEY

- Site boundary
- 250m linear distance from site boundary
- Pond

SCALE: 1:3,250 at A3

0 50 100 150 200 Metres

N

EPR

CLIENT: Esquire Developments Ltd

PROJECT: Blackthorn Farm, Meopham

DATE: 30 July 2025

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Basemap: Esri UK, Esri, HERE, Garmin, INCREMENT P, USGS

Appendix 1
Summary of Relevant National Legislation

The Environment Act 2021

The Environment Act 2021 placed a requirement on the Secretary of State to make regulations setting out long-term targets for air quality, water, biodiversity, resource efficiency and waste reduction. It also required the Government to produce an Environmental Improvement Plan, to report on progress towards its goals annually, to meet the targets that are set in relation to the improvement of the natural environment and to produce remedial plans should this not be achieved.

In relation to water quality, the Act placed new duties on the Government, Environment Agency and sewerage undertakers to reduce the frequency and harm of discharges from storm overflows on the environment, and for monitoring the quality of watercourses affected by those overflows.

It also included a requirement for an independent Office for Environmental Protection (OEP) to be established, with responsibilities for monitoring and reporting on progress against environmental improvement plans and targets. The OEP also has investigation and enforcement powers against public authorities failing to comply with environmental law when exercising their functions.

The Act made provision for 10% biodiversity gain to become a condition of planning permission in England, through amendments to the Town and Country Planning Act 1990. These amendments came into force on the 12th February 2024 (delayed to 2nd April 2024 for 'small sites') and are implemented through a series of new statutory instruments collectively referred to in this document as the 'Biodiversity Net Gain Regulations' (detailed further below). The 10% biodiversity gain is measured through a biodiversity metric published by the Department of the Environment, Food and Rural Affairs (DEFRA) on behalf of the Secretary of State. The Act also establishes Biodiversity Net Gain as a requirement for Nationally Significant Infrastructure Projects (NSIPs).

The Act also strengthens the biodiversity duty placed on public authorities through amendments to the Natural Environment and Rural Communities Act 2006 Section 40, requiring such authorities to not only conserve but also enhance biodiversity when exercising their functions. Public authorities will also be required to publish summary reports of actions taken under Section 40 at least every five years.

The Act provides the legal basis for the creation of Local Nature Recovery Strategies (LNRSs) for England (including specifying their content), and the preparation and publication of species conservation strategies and protected sites strategies.

The Act also created a new legal vehicle known as a 'Conservation Covenant' which is a voluntary, legally binding private agreement between landowners and responsible bodies (the latter designated by the Secretary of State) which conserve the natural or heritage features of the land, enabling long-term conservation. Conservation Covenants are designed to 'run with the land' when it is sold or passed on and are intended to become a primary mechanism for the delivery of Biodiversity Net Gain (BNG).

The Act provides new powers for the Government to amend in future Regulation 9 and Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') –

but “only if satisfied that the regulations do not reduce the level of environmental protection provided by the Habitats Regulations”.

Several aspects of protected species licencing have also been adjusted by the Act. These include the removal of several inconsistencies between the Habitats Regulations and the Wildlife & Countryside Act 1981 (as amended), ensuring that licences issued under the former piece of legislation also apply under the latter, and making it now possible for licences to be issued under Section 16(3) of the Wildlife & Countryside Act 1981 (as amended) for purposes of overriding public interest. The maximum term of a licence that can be issued by Natural England has also been extended from 2 to 5 years.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is a key mechanism for the legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. Certain species of bird, animal and plant (including all of the European Protected Species listed above) are afforded protection under Schedules 1, 5 and 8 of the Act. Reference is made to the various Schedules and Parts of this Act (**Table A1.1**) in the section of this Appendix dealing with Legally Protected Species. The Act also contains measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) and public rights of way as well as preventing the establishment of invasive non-native species that may be detrimental to native wildlife.

Great Crested Newts

The Great Crested Newt is afforded legal protection by the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 (as amended). Therefore, if Great Crested Newt are present, a licence is likely to be required to facilitate development. This could either be a ‘traditional’ NE mitigation licence or District Level Licence, which can negate the need for extensive survey work. Furthermore, the planning authority has certain legal duties when making planning decisions with respect to this species.

Reptiles

All four of the widespread British species of reptile, Common Lizard *Zootoca vivipara*, Slow-Worm *Anguis fragilis*, Grass Snake *Natrix helvetica*, and Adder *Vipera berus*, are Species of Principal Importance in England. They are protected under Schedule 5 (Sections 9.1, 9.5a, 9.5b) of the Wildlife & Countryside Act 1981 (as amended) from intentional killing, injury, and trade. The habitat of the four widespread reptiles is not legally protected; however, the replacement of habitat lost through development may be required through the planning system.