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Reptile Survey

Land at Stebbing, Essex

Site	<i>Land at Stebbing, Essex</i>
Project number	<i>119321</i>
Client name / Address	<i>Montare LLP, Thremhall Park, Start Hill, Bishop's Stortford, CM22 7WE</i>

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Declaration of compliance

The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.



We are a Chartered Institute of Ecology and Environmental Management (CIEEM) Registered Practice. All of our ecologists are members of CIEEM and between them carry licences for the majority of protected species.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

CONTENTS

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	4
2.1. Aims and scope of reptile survey	4
2.2. Site description and summary of previous survey effort	4
2.3. Proposed development	4
2.4. Legislation and planning policy	5
3. METHODOLOGIES	6
3.1. Reptile Survey	6
3.2. Surveyors	7
3.3. Constraints	7
4. RESULTS	10
4.1. Reptile survey.....	10
4.2. Population estimate.....	10
5. EVALUATION AND RECOMMENDATIONS.....	13
5.1. Assessment of impacts	13
5.2. Mitigation strategy	13
6. CONCLUSIONS	16
7. REFERENCES	17
8. APPENDICES.....	18
Appendix 1: Legislation and planning policy	18
Appendix 2: Raw survey data.....	20

1. EXECUTIVE SUMMARY

In April 2022, MKA Ecology Ltd was commissioned to undertake reptile surveys at Land at Stebbing, Essex in order to establish the presence/likely absence of this species group and any need for mitigation. The surveys involved the deployment of Artificial Cover Objects (ACO) at the site followed by seven survey visits to search the site and ACO for reptiles in suitable weather conditions. The survey visits were undertaken between 23 May 2022 and 9 June 2022.

The site consists of two areas of land in the village of Stebbing in Essex. The northern area is referred to as Plot 1A and the southern area is referred to as Plot 1B in this report. The site comprises areas of meadow grassland, scrub and wet woodland which provide suitable basking and foraging habitat for reptiles. The eastern areas of Plots 1A and 1B are to be developed into residential housing. The western areas are to be enhanced, with habitat creation and biodiversity enhancements implemented.

Populations of slow-worm and grass snake were found on site. A maximum of four slow-worm and three grass snake were recorded across the site on a single site visit, with juvenile slow-worms found on both Plots 1A and 1B and a single juvenile grass snake found on Plot 1B. The site is considered to hold low populations of both slow-worm and grass snake, and does not qualify as a Key Reptile Site. However, this population size is an estimate only limited by the nature of the presence /absence survey.

The proposed construction works have the potential to remove large areas of suitable reptile habitat as well as killing individuals. All UK reptile species are protected under the Wildlife and Countryside Act (1981, as amended) making it an offence to injure or kill individuals. Therefore, a mitigation strategy must be implemented to prevent the harm or killing of reptiles throughout the development process.

The mitigation process will aim to retain the slow-worm and grass snake on-site post-development. The process will require the installation of semi-permanent fencing surrounding the construction footprint, isolating any reptiles occupying this area. These individuals will then be captured and translocated to a receptor area; ideally the receptor site will be on site, but this is dependent upon variables of size allocation and restoration opportunities. The receptor site will require habitat improvements to ensure that it can support a potentially increased population density. Finally, a destructive search of the construction area will be undertaken to capture and translocate any remaining reptiles occupying the construction footprint. These steps will require a precise strategy to ensure the development process maintains a viable reptile population post development and stays within its legal requirements of ecological sustainability.

2. INTRODUCTION

2.1. Aims and scope of reptile survey

In April 2022, MKA Ecology Ltd was commissioned by Montare to undertake reptile surveys at Land at Stebbing, Essex in order to support a planning application for a proposed residential development. Reptile surveys were recommended by the Preliminary Ecological Appraisal undertaken in 2021 (Hybrid Ecology Ltd., 2021). The aims of the surveys undertaken were to:

- Determine the presence or likely absence of native British reptiles at the Site;
- Calculate population size class estimates for any reptiles recorded at the Site;
- Detail recommendations for mitigation where required; and
- Detail recommendations for biodiversity enhancements with regards to native British reptiles where appropriate.

2.2. Site description and summary of previous survey effort

The survey area is shown on the map in Figure 1 of section 3. Within this report this area is referred to as the Site or Land at Stebbing, Essex. The Site covers two areas of land in the village of Stebbing, Essex. The northern area of land is referred to as Plot 1A, with the southern area referred to as Plot 1B; these comprise approximately 3.8ha and 2ha respectively. This land currently consists of meadow grassland, patches of scrub, wet woodland, hedgerows and lines of trees. The site falls under the authority of Uttlesford District Council.

The Preliminary Ecological Appraisal (Hybrid Ecology Ltd., 2021) found that the grassland, hedgerows, and woodland on site provided potential habitat for common reptile species. A data search carried out as part of the Preliminary Ecological Appraisal found grass snake and adder recorded 0.5km and 0.6km from the site respectively.

2.3. Proposed development

It is proposed that the eastern areas of the site will be developed into residential housing. It is anticipated that the proposed development will develop considerable areas of suitable reptile habitat across both areas of land within the site. However, the habitats covering the western areas of both areas of the site will be enhanced, with wet woodland and orchards created.

2.4. Legislation and planning policy

The four most commonly encountered species of reptile; common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix helvetica Helvetica* are listed under Schedule 5 of the Wildlife & Countryside Act (1981) as amended by the CRoW Act (2000), and are subject to part of Section 9(1) and all of Section 9(5) which makes it illegal to:

- Intentionally kill, injure (Section 9(1))
- Selling, offering for sale, possessing or transporting for the purpose of sale or publishing advertisements to buy or sell a protected species (Section 9(5))

Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are afforded further protection within the UK, however their presence in Essex is considered to be highly unlikely.

In addition to obligations under wildlife legislation, the revised National Planning Policy Framework (NPPF) updated in July 2021 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

Furthermore, all reptile species are designated as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (Act (2006)). This sets out a duty for decision makers, including local planning authorities, to contribute towards maintaining, and where possible enhancing the conservation status of any Section 41 Species of Principal Importance found on a site.

3. METHODOLOGIES

3.1. Reptile Survey

A presence / likely absence survey was undertaken in accordance with survey guidance from Froglife (1999) and Gent & Gibson (2003).

The survey involved the placement of Artificial Cover Objects (ACO) together with direct observation to determine whether reptiles were present or likely absent. ACO were placed in clusters of five or ten mats spread evenly across all habitats considered suitable for reptiles. The location of ACO clusters is shown in Figure 2 at the end of this section.

The ACO are composed of approximately 0.5m² sheets of corrugated metal and roof felt. Reptiles often use ground objects as a place to shelter from predation or disturbance and for absorbing heat. They are ectothermic, whereby they gain their body heat from the sun. Reptiles within the immediate vicinity are attracted to ACO in order to gain heat at appropriate times of day, because of the materials ability to absorb heat and provide a warmer micro-habitat than the surrounding vegetation.

During placement of refugia, the surveyors conducted a slow walkover of the site, searching for any reptiles as they walked, being careful to be quiet and to minimise vegetation disturbance where possible.

The ACO were left for 17 days to allow any reptiles present to habituate to them. Seven survey visits were then carried out in suitable weather conditions between 23 May 2022 and 9 June 2022. Visits were timed to the period of the day when reptiles are most likely to be seeking a means of gaining additional heat, i.e., early morning, late afternoon, post-showers and cooler times of day. Different species and even sexes of animals have differing behavioural patterns and preferences in terms of using such ACO and basking out in the open, therefore a varied approach to visit times is generally beneficial in ensuring a thorough survey. Details of timings and weather conditions for each survey can be found in Table 1.

Table 1: Summary of weather conditions

Visit	Date	Time of survey	Weather conditions*
1	23/05/2022	08:45	Wind: 0 Cloud: 4/8 Temp: 15°C Rain: None
2	27/05/2022	09:20	Wind: 4 Cloud: 2/8 Temp: 13°C Rain: None

Visit	Date	Time of survey	Weather conditions*	
3	30/05/2022	12:15	Wind: 2 Cloud: 4/8	Temp: 13°C Rain: None
4	01/06/2022	10:10	Wind: 2 Cloud: 4/8	Temp: 14°C Rain: light rain at end of survey
5	06/06/2022	14:00	Wind: 2 Cloud: 8/8	Temp: 14°C Rain: None
6	07/06/2022	09:00	Wind: 0 Cloud: 4/8	Temp: 17°C Rain: None
7	09/06/2022	10:15	Wind: 2 Cloud: 0	Temp: 15°C Rain: None

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.2. Surveyors

The reptile survey visits were undertaken by:

- Gabrielle Wilbur ACIEEM, Senior Ecologist at MKA Ecology Ltd. Gabrielle has over seven years' experience in undertaking reptile surveys.
- Megan Stigling, Graduate Ecologist at MKA Ecology Ltd. Megan has over two years' experience in undertaking reptile surveys.
- Libby Pool, Graduate Ecologist at MKA Ecology Ltd. Libby has over two years' experience in undertaking reptile surveys.
- Max Ellis, Graduate Ecologist at MKA Ecology Ltd. Max has one seasons experience in undertaking reptile surveys.
- Eleanor Richards, Graduate Ecologist at MKA Ecology Ltd. Eleanor has half a season's experience in undertaking reptile surveys.
- Phoebe Waller, Student Ecologist at MKA Ecology Ltd. Phoebe has half a season's experience in undertaking reptile surveys.

3.3. Constraints

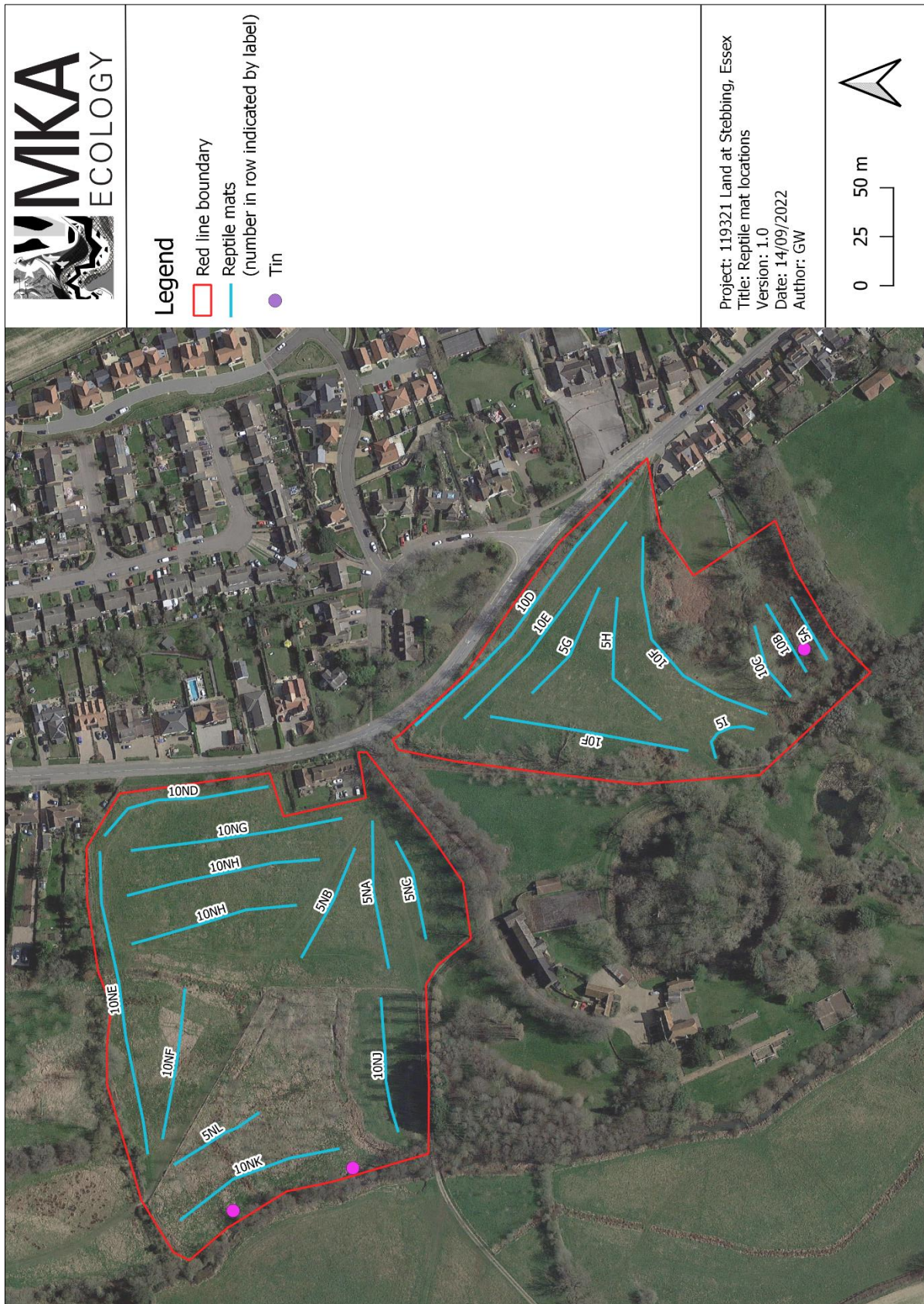
Numbers of common lizards may be under-recorded during optimal weather conditions because of their rapid movement and sensitivity to disturbance (JNCC, 2003). However, the use of incidental visual inspections during the survey limits the risk of bias.

The optimal reptile survey months are April, May and September. Four of the reptile visits (visits 4, 5, 6 and 7) were undertaken in June, which falls outside the optimal survey window. This is likely to have

under-recorded the density of reptiles. However, four visits were undertaken in early June (01-09 June), therefore only just outside the optimal month range. Moreover, the weather conditions on visits 4 to 7 were within the recommended temperate window of 9-18°C, thereby meaning that the temperature was not a large constraint.

It is important to note that some reptile refugia were damaged or moved throughout the survey effort. It is possible that this also could have detrimentally affected the recorded density of reptiles.

Figure 1: Location of ACO's.



4. RESULTS

4.1. Reptile survey

A total of 18 records of slow-worm and 11 records of grass snake were recorded across the site, with a maximum of 4 slow-worm and 3 grass snake during a single visit (see Table 2). Full survey results are provided in Appendix 2. Slow-worm individuals were found within both Plots 1A and 1B, with the grass snakes only found in Plot 1B. A map illustrating the number and species of reptiles found at each ACO group is shown in Figure 2.

Table 2: The peak count of reptiles recorded on each survey visit at Land at Stebbing, Essex

Survey visit	Peak count for each survey visit	
	<i>Slow-worm</i>	<i>Grass Snake</i>
1	4	0
2	3	1
3	0	0
4	1	2
5	3	3
6	3	2
7	4	3

4.2. Population estimate

Following the guidance suggested by Froglife (1999) populations of reptiles can be classified as 'low, good or exceptional' based on the number and species of reptiles per hectare recorded on site. However, it should be noted that to gauge a relative population size, at least 20 visits per season are needed. An accurate population estimate requires a 20-visit survey, and there were constraints within the seven-visit survey, whose aim was to establish the presence or likely absence of reptiles on site, not to gain a full understanding of the population size. The estimate of population size below should take into account the above caveat and that these population size categories are only estimates of the actual population, which is beyond the scope of this survey.

The population size categories and scoring for the Key Reptile Register are shown in Table 3 below. The figures in Table 3 refer to the minimum number of adults seen by observation and/or under ACO, as seen by one surveyor in one day, at a refuge density of up to 10 per hectare.

Table 3: Population size categories for common reptile species

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

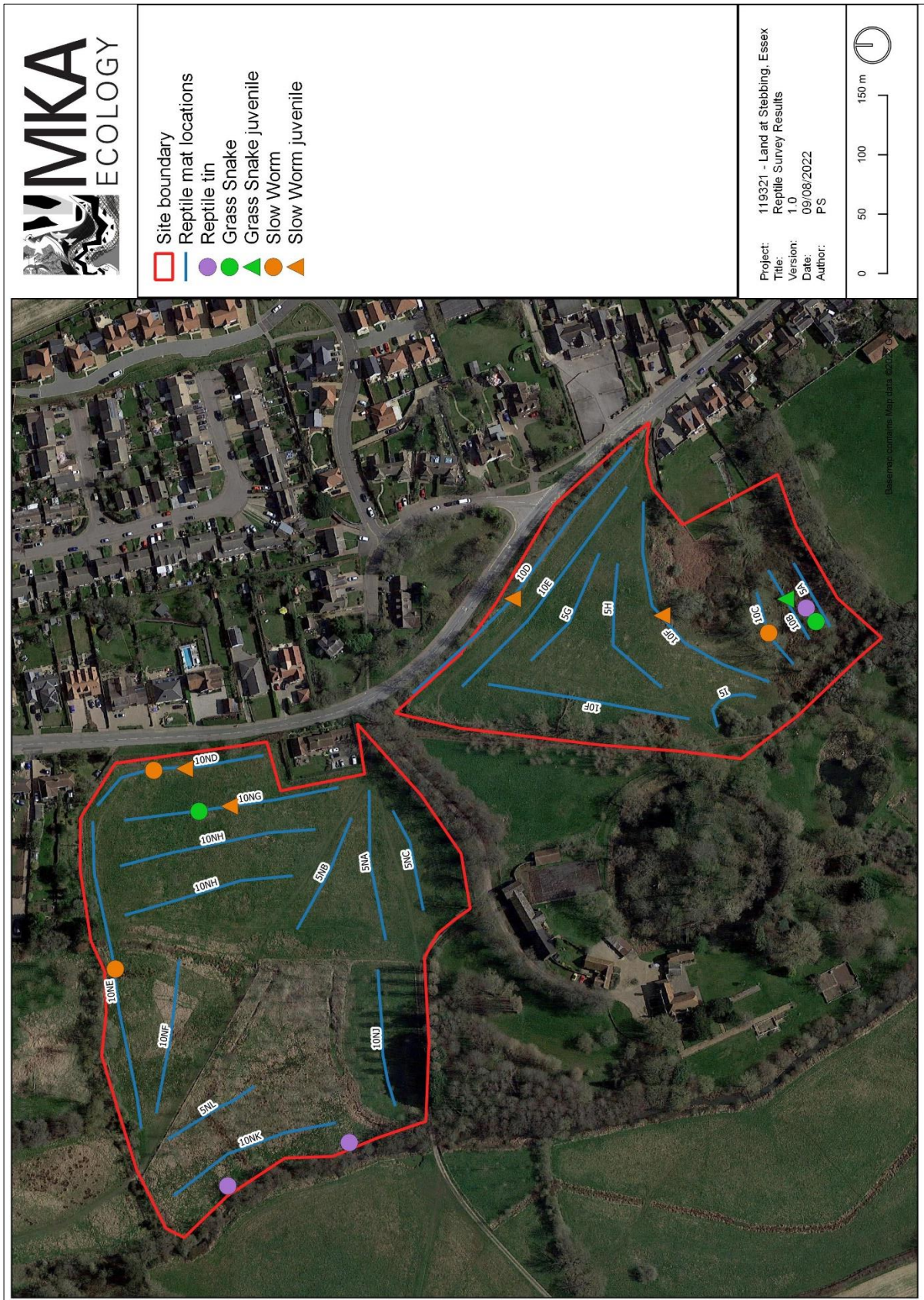
The reptile survey at Land at Stebbing, Essex recorded a maximum of four slow-worm and three grass snake on one visit across the site. There is a particularly high density of slow-worm in the north-east corner of Plot 1A. However, density here was nevertheless lower than 5 individuals per hectare, with no more than 4 individuals recorded on a single visit. Therefore, the site is estimated to support a potentially low population of both slow-worm and grass snake (<5/ha).

In addition to the above, the Key Reptile Site Register was considered. This is a mechanism designed to promote the safeguard of important reptile sites (Froglife, 1999). To qualify as a Key Reptile Site, a site must meet at least one of the following criteria:

- Supports three or more reptile species;
- Supports two snake species;
- Supports an exceptional population of one species;
- Supports an assemblage of species scoring at least 4;
- Does not meet any of the previous criteria, but is of particular regional importance due to local rarity.

It was determined that the reptile populations found at Land at Stebbing, Essex do not meet any of these criteria and thus the site does not qualify as a Key Reptile Site.

Figure 2: Distribution of reptiles recorded at Land at Stebbing, Essex



5. EVALUATION AND RECOMMENDATIONS

The following section contains an evaluation of the reptile survey results for Land at Stebbing, Essex along with recommendations for further work where required.

5.1. Assessment of impacts

The site was found to sustain potentially low populations of grass snake and slow-worm. Since the proposed plans at the site involve the removal of areas of suitable reptile habitat from the eastern areas of the site, the development therefore has the potential for significant adverse impacts on these populations.

The development must ensure that no reptiles were injured or killed during the process of construction to comply with the requirements of the Wildlife and Countryside Act (1981), as amended. In addition, under the provisions of the Natural Environment and Rural Communities Act (2006) the development would need to ensure that the biodiversity within the Site is maintained. If reptile habitat is to be disturbed by the development, mitigation is required to ensure that no individuals are harmed and ideally that there is no net loss of reptile populations.

A reptile mitigation strategy is required to ensure that the development is sustainable, and this is described in further detail below.

5.2. Mitigation strategy

Mitigation for the presence of reptile species is a commonly encountered development issue. Mitigation is most effectively and economically achieved when it is possible to retain areas of suitable reptile habitat *in situ*. At this Site, it is anticipated that the design scheme for the site will aim to include sufficient areas of retained habitat to ensure the long-term viability of the reptile populations at the site.

Firstly, before commencing the reptile translocation, semi-permanent reptile exclusion fencing should be installed around the perimeter of the construction footprint of the Site. This fencing is formed of low plastic sheeting, dug into the ground, and supported by wooden stakes. The exclusion fencing will prevent the movement of reptiles into the construction footprint of the Site during the translocation/construction works. It may also be beneficial to consider sub-dividing the exclusion area into further smaller compartments to aid in the capture effort. Installation of the fencing by a specialist contractor should be conducted under an ecological watching brief to ensure that no reptiles are accidentally killed or injured during the works.

Recommendation 1

Prior to the commencement of translocation works, a strategy for translocation of reptiles will be required. This will include the use of semi-permanent reptile fencing, isolating the construction footprint of the Site to prevent the movement of reptiles into the area of impact from the surrounding countryside. The reptile fencing must remain in place for the duration of development works on site and will require monitoring.

Following the guidance document produced by Herpetofauna Groups of Britain and Ireland (HGBI, 1998), translocation of low populations of grass snake and slow-worm should be undertaken for a recommended period of minimum 60 suitable capture days during the optimal trapping period (between the months of March and September inclusive). Translocation may continue into October, but should not be commenced at such a late date. The capture effort should involve a minimum density of 50 ACO per hectare. The capture effort will be continued until there has been a substantial depletion in the population and ideally until all reptiles have been removed. A minimum of five consecutive suitable trapping days with no captures or sightings should be achieved before the population can be deemed to have been substantially depleted or removed. Controlled manipulation of the habitats on site may be required in order to boost capture rates towards the end of the translocation effort. Site specific management and intense translocation work can enable a more efficient translocation procedure.

It should be noted that the exact time needed to complete the translocation will depend on the site conditions and capture rate, and therefore may potentially require more time or less time than that the recommended effort stated in the guidelines. The key to a successful translocation strategy will be the identification of a suitable receptor site. Ideally this will be on site, secured through temporary exclusion fencing and enabling dispersal of reptiles into the wider area post construction. In order to support a higher density of reptiles, any receptor site will be likely to require simple habitat improvements (e.g.: provision of basking areas, creation of simple hibernacula (hibernating bund) and simple scrub management).

Recommendation 2

A key part of the strategy will be the identification of a receptor site, which will require habitat manipulation to ensure it can support a higher density of reptiles. Ideally this will be on site, enabling release and dispersal of reptiles post construction. Translocation should be undertaken between months of March and September, although this may continue into October but should not be commenced at such a late date. Trapping will continue until five consecutive days with no captures or sightings have been achieved. It is recommended that identification of receptor site is undertaken at the first juncture. There may also be a need to identify receptor areas off site.

Upon completion of the translocation works, a destructive search of the construction area should be conducted under an ecological watching brief. This is recommended as a precautionary approach, to avoid harm to any reptiles that may have escaped capture during the translocation effort. The

destructive search will involve the controlled strimming of suitable vegetation for reptiles on site, with hand searches of any likely basking structures by an experienced ecologist. Any rubble piles or log piles should be removed by hand with an ecologist present to capture any reptiles encountered and release them into the receptor area of the site. This approach will ensure that no reptiles are accidentally killed or injured during site clearance works.

Recommendation 3

A destructive search of the construction area should be completed under an ecological watching brief once the translocation programme has been completed.

6. CONCLUSIONS

Reptile surveys undertaken at Land at Stebbing, Essex found low populations of grass snake and slow-worm at the site. Juvenile slow-worms were found across both Plots 1A and 1B, with a juvenile grass snake present at Plot 1B.

All reptile species present in the UK are protected under the Wildlife and Countryside Act (1981, as amended). Therefore, mitigation will be required to ensure no reptiles are injured or killed during the development works.

A translocation strategy will need to be developed, primarily identifying a receptor site for translocating reptiles away from the development footprint. This receptor site should ideally be on site, and will require simple enhancements in order to support a larger density of reptiles. The receptor site will require habitat improvements to ensure that it can support a potentially increased population density. The strategy will involve the use of semi-permanent fencing to surround the proposed construction footprint, isolating any reptiles present in this area. Following this, trapping efforts should commence in order to capture and translocate all reptiles still occupying areas in the proposed construction footprint. Translocation efforts should be undertaken in the months of March to September (and can continue into October), and will continue until five consecutive days with no captures or sightings have been achieved.

Following completion of the translocation effort, a destructive search of the construction footprint should be completed to capture any remaining reptiles occupying this area; these individuals should also be translocated. These steps will require a precise strategy to ensure that the development maintain a viable reptile population post-development.

7. REFERENCES

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

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

Herpetofauna Groups of Britain and Ireland (HGBI) (1998) *Evaluating Local and Mitigation / Translocation Programmes: Maintaining best practice and lawful standards*. HGBI: Halesworth

Hybrid Ecology Ltd. (2021). Preliminary Ecological Appraisal. Hybrid Ecology Ltd.: Chelmsford.

8. APPENDICES

Appendix 1: Legislation and planning policy

The Conservation of Habitats and Species Regulations 2017 (as amended)

Full legislation text available at: [The Conservation of Habitats and Species Regulations 2017 \(as amended\) \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2017/16/contents)

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/1981/69>

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/2006/16/contents>

National Planning Policy Framework (NPPF)

Full text is available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

The revised NPPF was updated on 20 July 2021 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 174 to 188 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

“Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity”.

Appendix 2: Raw survey data

The following table shows the number of slow-worm and grass snake recorded at each ACO cluster across all survey visits.

Slow-worm

ACO group*	Site visit number						
	1	2	3	4	5	6	7
10C	1						
10D						1	1
10F		1					1
10ND	2	1		1	1	1	1
10NE							1
10NG		1			2	1	
Total	3	3	0	1	3	3	4

* see Figure 2 for location reference

Grass Snake

ACO group*	Site visit number						
	1	2	3	4	5	6	7
10B					2	1	2
10NG				1			
<i>Tin – south edge of southern area of site</i>		1		1	1	1	1
Total	0	1	0	2	3	2	3

* see Figure 2 for location reference



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