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GEOSPHERE ENVIRONMENTAL

REPORT NUMBER:	3709,EC/REPTILE/GG,RF,KL/11-07-19/V1
SITE:	Land off Fir Covert Road, Taverham, Norfolk, NR8 6HL
DATE:	11 July 2019



DOCUMENT CONTROL SHEET

Report Number:	3709, EC/REPTILE/GG,RF,KL/11-07-19/V1
Client:	M Scott Properties Limited
Project Name:	Land off Fir Covert Road, Taverham, Norfolk, NR8 6HL
Project Number:	3709,EC
Report Type:	Reptile Survey and Enhancements
Status:	Final
Date of Issue:	11 July 2019

Issued By:

Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ. T: 01603 298 076 / 01473 353 519. W: <u>www.geosphere-environmental.co.uk</u>

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Prepared By:	Reviewed By:	Authorised By:
George Green Graduate Ecologist	Richard Fenna Senior Ecological and Arboricultural Consultant	Katie Linehan Technical Director of Ecology

REVISION	RECORD			
Revision	Date	Revision Details	Prepared By:	Admin



Executive Summary

Geosphere Environmental Limited was commissioned by Scott Properties to
undertake a Reptile Survey of the land at Land off Fir Covert Road, Taverham,
Norfolk, NR8 6HL.
The report relates to the proposed development of the site for residential use. The
proposed development covers an area of approximately 14.5 hectares (ha).
A total of 228 artificial cover objects (ACOs) were distributed throughout the 14.5
hectare (ha) area. The ACOs were checked on seven occasions between 05 April
2019 and 20 May 2019.
The reptile survey has been carried out by suitably trained and experienced
ecologists in order to establish the status of reptiles in habitats to be affected by
proposed development at the site.
Throughout the seven visits conducted, no reptiles were recorded. This could be
a result of current management practices onsite. For example, if field margins are
cut in Spring and Autumn, the site would only support a transient population (very
low numbers) of reptiles at most.
No reptiles were found using the site throughout the surveys.
Biological enhancements could be implemented to increases suitability, with
plantation of tussock grass species and log piles incorporated into the design of
the scheme.



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Table 1 – Assessment of Conservation Value of Reptile Species



1. INTRODUCTION

Geosphere Environmental Ltd was commissioned by M Scott Properties Limited to undertake a Reptile Survey of the site at Land off Fir Covert Road, Taverham, Norfolk, NR8 6HL. Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

The report relates to the proposed development of the 14.5 hectare (ha) site for residential use. The site is located at National Grid reference TG 16005 15465.

1.1 Aims

The aims of the survey were to:

- Identify the presence/absence of reptiles on the site;
- If present, to estimate a population size and species distribution;
- Evaluate the importance of habitats for reptiles onsite.

1.2 Background information

The habitats onsite were confirmed to be potentially suitable for reptiles within the Preliminary Ecological Appraisal undertaken by Geosphere Environmental Ltd (Luci Spencer) in 04 December 2018 (ref. **R.1**). The desk study confirmed records of Common Lizard, Slow Worm, Adder and Grass Snake within 2km of the site. Appropriate habitat noted onsite refers to the mixed plantation woodland boundaries, close-grazed improved grassland, tall ruderal and defunct hedgerows. The grassland, ruderal and hedgerow onsite provides areas for reptiles to forage and bask. The woodland and associated log piles within this habitat offer opportunities for hibernation. As shown on the Phase 1 Habitat Survey plan, Drawing ref. 3551,EC,AR,DS/003/Rev 1 in Appendix 3.

As such a reptile survey has been undertaken to establish whether any reptiles are present onsite and inform any mitigation that would be necessary were reptiles confirmed.

1.3 Current UK Legislation

The four common British reptiles, Common Lizard (*Zootoca vivipara*), Slow-worm (*Anguis fragilis*), Grass Snake (*Natrix natrix*), and Adder (*Vipera berus*) are protected under the Wildlife and Countryside Act (WCA) 1981 (part of Section 9(1) and all of Section 9(5) apply). Meaning they are protected against intentionally killing and injuring (but not 'taking'), and against sale. They are also listed on the Biodiversity Action Plan Priority List.



Sand Lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) are fully protected under Section 9 of the WCA and are classified as European protected species under the Conservation of Habitats and Species Regulations 2010 under schedule 2 Annex IV. The protection afforded is given in regulations 40 and 43.



2. TECHNICAL APPROACH

2.1 Reptile Survey

The reptile survey was undertaken by Geosphere Environmental in areas of potentially suitable reptile habitat in accordance with guidance published by JNCC (ref. **R.2**) and Froglife (ref. **R.3**) for survey methodology and effort.

The survey was undertaken by suitably qualified ecologists, Richard Fenna (Senior Ecological and Arboricultural Consultant), Tom Cox (Ecologist), Louisa Theeman (Assistant Ecologist) and George Green (Graduate Ecologist), in order to establish the status of reptiles to be affected by the proposed development at the site.

The report of the survey and recommendations has been prepared to inform a planning application in accordance with the key principles of the Ministry of Housing, Communities and Local Government (MHCLG) (July 2018) National Planning Policy Framework (NPPF) (ref. **R.4**). Conclusions and recommendations for further works are given to comply with current legislation and guidance.

2.2 Methodology

Froglife's method for assessing reptile population sizes is based upon the peak number of adult reptiles seen using artificial cover objects (ACOs) on a site (ref. **R.3**). This methodology combined with a visual search of existing natural refuge was adopted during the survey.

The survey area covers a total area of approximately 14.5 hectares (ha). Approximately 12.9 hectares (ha) were deemed a suitable habitat for basking. This includes field margins, the base of hedgerows, and woodland edge, targeted specifically within the reptile survey. A total of 228 ACOs ($0.5m^2$ roofing felt mats) were placed in suitable habitat and strategically placed in positions that would receive sunlight during the course of the day. The ACOs were placed at a density of 17.67 per hectare. The locations are shown on the Reptile Survey: ACO Locations plan, Drawing ref. 3709,EC/002/Rev 0, shows the positions of ACOs placed attached in Appendix 3.

Visual transect and refuge searches were undertaken on seven visits between 05 April and 20 May 2019, choosing optimal weather in which reptiles would be active or using the ACOs.

The reptile population size has been estimated based upon the peak number of adult reptiles observed during surveys as detailed by Froglife, (ref **R.3**). This methodology is based upon an average ACO placement of 5 to 10 per hectare (ha) and provides a rough estimate only, as it is difficult to get a more accurate idea of population size on a site without long term study and analysis.



2.3 Ecological Impact Assessment for Reptiles

The CIEEM guidance on Ecological Impact Assessment (ref. **R.5**) assesses the nature conservation value within a geographical context. To attain each level, the reptile resource or one of the features, (species population or assemblage of species), should meet the criteria set out in Table 1 below:

Table 1 – As	sessment of Conservation Value of Reptile Species
Geographical	Brief Description
Frame of	
Reference	
International,	Widespread reptiles in Britain do not meet international or national criteria for conservation, as they
National and	are common in Europe and although declining nationally there is not a marked national decline in
Regional	species or distribution across the UK.
Regional	The four widespread reptiles in Britain are common across England so populations encountered do
	not meet criteria for regional importance.
County	Species listed as priority species in the UKBAP, which regularly occurs in county important numbers.
councy	Species present in county important numbers (>1% of county population).
	Sustainable populations of a species that is rare or scarce within a county.
	A site designated for its county important assemblage of reptiles.
District	Species present in numbers just under county importance (<1% of county population).
District	Sustainable populations of a species that is rare or scarce within the locality.
Local	Species regularly occurring in locally sustainable populations.
Local	Areas of habitat with good or high populations of reptiles encountered within a site boundary.
Site	Low populations of common reptiles within a site boundary.



3. REPTILE SURVEY

3.1 Results

A total of seven surveys were undertaken within the site and the weather conditions documented for each is attached in Appendix 4. Throughout the seven visits conducted, no reptiles were encountered within the site boundary.

The results indicate that reptiles are not prevalent within the local area to be confirmed present. As such, there is negligible ecological value for reptiles at present within the site boundary.

3.2 Enhancement Opportunities

Although reptiles have not been confirmed, the site still has potential for the proposed development to enhance the existing quality of the habitat to attract reptiles to site if present in the wider area. This can be achieved by creating tussocky grassland within areas of open space. A guide/seed mix for the creation of the suitable tussock species is included as Appendix 5.

In addition to this, the construction of log piles or log pyramids adjacent to woodland margins, specifically in areas were new woodland is being developed, would allow for refuge and hibernation. A guide to the creation of appropriate log piles is included in Appendix 6.

These enhancements would improve the habitat for reptiles and other species such as invertebrates, which are a common prey species for reptiles.



4. CONCLUSIONS

No reptiles were confirmed present during the survey.

The enhancements suggested within this report, including the implementation of tussock grassland species and the incorporation of log piles would likely result in a positive impact on reptiles in the local area and should be incorporated in the design of the scheme.



APPENDICES



Appendix 1 – Report Limitations and Conditions

General Limitations and Exceptions

This report was prepared solely for our Client for the stated purposes only and is not intended to be relied on by any other party or for any other use. No extended duty of care to any third party is implied or offered.

Geosphere Environmental Ltd does not purport to provide specialist legal advice.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based upon current legislation in force at that time.

Ecology Limitations and Exceptions

Any limitations associated with the report will be stated. The consequences of any limitations, findings and/or recommendations in the report are made clear in line with CIEEM (2013) 'Guidelines for Preliminary Ecological Appraisal' (GPEA) and BSI (2013) BS 42020:2013 Biodiversity – 'Code of practice for planning and development'.

This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context.

The wildlife and habitats present on any site are subject to change over time. Surveys of this kind can have limited validity, with the possibility of behaviour patterns and territory boundaries varying over time, due to the dynamics of adjacent populations.

New information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.

It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment.



The scoping survey does not assess the presence or absence of a species, but is used to assess the potential for habitat to support them. Additional surveys may be recommended if, on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

This survey does not constitute an invasive species survey and should not be treated as such.

Owing to seasonal variances and prevailing weather, conditions may sometimes be sub-optimal for surveying and this may delay or disrupt planned survey programmes. If applicable, full details are given in the report.

Geosphere Environmental Ltd may not be aware of information that could be held by other organisations or individuals, and it is always possible for features of nature conservation interest to be unrecorded during surveys.

Scientific survey data will be shared with local biological records centre in accordance with the CIEEM professional code of conduct.



Appendix 2 – References

- **R.1.** Preliminary Ecological Appraisal (2018), Geosphere Environmental Limited, Report reference: 3551,EC-P1-PEA-LS,RF,KL-04.12.18-V1
- **R.2.** Gent T., Gibson S. (2003) Herpetofauna Workers Manual. JNCC.
- **R.3.** Froglife (1999). Froglife Advice Sheet 10: Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife, Halesworth.
- **R.4.** Ministry of Housing, Communities and Local Government (MHCLG) (July 2018) National Planning Policy Framework (NPPF).
- **R.5.** CIEEM, (2016). Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (Second edition dated January 2016).



Appendix 3 – Drawings

Phase 1 Habitat Survey Plan, Phase 1 – Drawing ref. 3551,EC,AR,DS/003/Rev 1

ACO Location Plan – Drawing ref. 3709,EC/002/Rev 0

geosphere environmental Itd Investigate design resolve







LEGEND

Site boundary

ACO Locations

SOURCE

© OpenStreetMap contributors
PROJECT

Land off Fir Covert Road, Taverham, Norfolk, NR8 6HL

TITLE

ACO Location Plan

DRAWING NUMBER

3709,EC/002/Rev0

SCALEDATEAs marked21/03/2019DRAWN BYCHECKED BYLTRF



Appendix 4 – Survey Weather Data

REPTILE SURVEY - WEATHER RECORDS



Project Number: 3709, EC

Date: 05/04/2019

Project Name:

Land off Fir Covert Road, Taverham, Norfolk, NR8 6HL

Surveyor Names:		George Green (GG), Richard Fenna (R		RF), Louisa The	eman (LT), Tor	n Cox (TC)	
Site Location (Grid Ref.)	:	TG 15972 1	TG 15972 15421				
Data	Ti	Time An		Temp (°C)	Wind	Cloud	General
Date	Start	End	Start	End	Speed* (Beaufort)	Cover (%)	Weather Observation
05/04/2019	11:10	12:15	12	14	2	30	
09/04/2019	12:15	13:15	11	11	2	40	
15/04/2019	11.50	12.40	10	10	1	30	
25/04/2019	14.00	15.00	13	13	2	80	
14/05/2019	11.15	12.15	14	15	2	10	Sunny and dry
23/05/2019	10.55	12.10	18	18	1	70	Sunny and dry
20/06/2019	11.00	12.00	17	18	1	20	

*Beaufort Scale

Beaufort Scale		Wind Speed (mph)	Beaufort Scale		Wind Speed (mph)
0	Calm	0 -1	4	Moderate breeze	13 - 17
1	Light air	1 - 3	5	Fresh breeze	18 - 24
2	Light breeze	4 - 7	6	Strong breeze	25 - 30
3	Gentle breeze	8 - 12	7	Near gale	31 - 38



Appendix 5 – Emorsgate Seed Mix

EM10 – TUSSOCK MIXTURE

The lists of plants below are taken from Emorsgate Seeds (ref.1), a company dedicated to the promotion of using wild plant seeds. These plants are grown on their sites and the seeds collected, which shows they are from a reputable source, rather than illegally taken from the wild.

EM10 – Tussock Mixture has been devised to create areas of tussocky grassland that, once established, require little or no maintenance. This grassland type can form a good habitat for insects, small mammals, birds, amphibians and reptiles, providing nesting sites during spring, food during summer and autumn, and shelter during winter.

NATIVE WILDFLOWERS

Common Name	Latin Name	Percentage
Yarrow	Achillea millefolium	0.5
Agrimony	Agrimonia eupatoria	1.5
Lesser Burdock	Arctium minus	1
Common Knapweed	Centaurea nigra	2.5
Greater Knapweed	Centaurea scabiosa	2
Wild Carrot	Daucus carota	2
Wild Teasel	Dipsacus fullonum	1
Hedge Bedstraw	Galium album - (Galium mollugo)	1
Meadow Cranesbill	Geranium pratense	0.2
Oxeye Daisy	Leucanthemum vulgare	0.5
Wild Parsnip	Pastinaca sativa	1
Ribwort Plantain	Plantago lanceolata	0.7
Common Fleabane	Pulicaria dysenterica	0.1
Red Campion	Silene dioica	2
Upright Hedge-parsley	Torilis japonica	2
Common Vetch	Vicia sativa ssp. segetalis	2
	20% repr	esentative mix

REFERENCES

1. <u>https://wildseed.co.uk/mixtur</u> <u>es/view/10</u>

NATIVE GRASSES

Common Name	Latin Name	Percentage
Meadow Foxtail (w)	Alopecurus pratensis	2
Crested Dogstail	Cynosurus cristatus	20
Cocksfoot (w)	Dactylis glomerata	16
Tufted Hair-grass (w)	Deschampsia cespitosa	2
Strong-creeping Red-fescue	Festuca rubra	20
Yorkshire Fog	Holcus lanatus	2
Tall Fescue (w)	Schedonorus arundinaceus - (Festuca arundinacea)	10
Meadow Fescue (w)	Schedonorus pratensis - (Festuca pratensis)	8
	80% representativ	e mix

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TITLE EM10 – Tussock Mixture

EM10 – TUSSOCK MIXTURE

GROUND PREPARATION

To prepare a seed bed first remove weeds using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

SOWING

Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed but firm in with a roll, or by treading, to give good soil/seed contact.

AFTERCARE

First Year

Most sown meadow wild flower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.

Mow newly sown meadows regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.

Avoid cutting in the spring and early summer if the mixture has been sown with a nurse cover of cornfield annuals, or is autumn sown and contains Yellow Rattle. These sown annuals should be allowed to flower, then in mid-summer cut back and the cut vegetation removed. It is important to cut back cornfield annuals before they die back, set seed or collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Carefully dig out or spot treat any residual perennial weeds such as docks.

Following Years

Once established tussocky grassland requires minimal maintenance.

Unwanted perennial weeds (docks, thistles) may need control by occasional spot treatment with a herbicide. To control scrub and bramble development, tussocky areas may need cutting every 2-3 years between October and February. For wildlife this cutting is best done on a rotational basis so that no more than half the area is cut in any one year leaving part as an undisturbed refuge.

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Appendix 6 – Log Pyramid and Log Piles

LOG PYRAMID AND LOG PILE GUIDANCE

1. LOG PYRAMID

Establishing the Log Pyramid

Where space is limited and log piles are deemed unsuitable, log pyramids can be created as shown below.

- Drill holes into some of the logs. Drill holes to various depths.
- Dig holes onto the ground ranging from 48cm deep to 60cm deep to give the pyramid shape. The final construction should be as shown below:



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REFERENCE Log pyramid drawing copyright of <u>https://ptes.org/wp-</u> <u>content/uploads/2016/11/Build-a-</u> <u>log-pile-for-stag-beetles.pdf</u>

2. STUMPERY

Taken and adapted from Buglife (<u>https://www.buglife.org.uk/activities-for-you/wildlife-gardening/create-your-own-dead-wood-habitats</u>)



Stumpery creation involves replicating a forest floor using a mix of different sized wood stumps, logs and even driftwood. They are similar to a rockery, but made with parts of dead trees such as stumps and logs.

Dig a hole in the ground. 'Plant' your logs in it, orientated vertically, so that half the log is in the hole. Pack soil in the gaps of the hole to bury the bases of the logs. This will support species like Stag beetle that like damp submerged dead wood. Interplant with ferns and other shade loving plants and bulbs. Stumperies are strongly recommended if you live in Stag beetle hotspots such as the New Forest, Home Counties and East Suffolk

TITLE

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3. LOG PILES

Resourcing Logs

Try to avoid taking logs from woods and hedges as you will be removing the resource from its natural environment, along with any associated flora or fauna. A local tree surgeon may be able to supply you with some logs. Alternatively sourcing logs from friends or neighbour who have had recent tree work is a viable way of sourcing the raw materials required.

Which Wood to Use

Logs at least 100mm thick (4 ins) with the bark still attached provide the best wood. Hard wood trees such as ash, oak and beech are particularly good. Birch logs can look particularly attractive.

Be careful of freshly cut willow and poplar logs, as these can easily re-sprout if left lying on the ground.

Establishing the Log Pile

Leaving woody cuttings from trees, shrubs and herbaceous plants in piles within a shrub bed is an ideal way of attracting invertebrate to site. The damp conditions behind peeling bark are very inviting for woodlice, spiders and beetles, while butterflies and ladybirds take up residence in the drier parts over winter.

It is best to not cut the wood into small pieces. Leave it in direct contact with the ground, in compact piles to maintain humidity. Larger diameter

Bury the lower logs into the soil a few centimetres. This keeps them damp and the resident creatures happy.

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Log Pyramid and Log Pile Guidance

2 of 2

REFERENCE

Log pyramid drawing copyright of https://ptes.org/wpcontent/uploads/2016/11/Builda-log-pile-for-stag-beetles.pdf





pieces are of most value, but even small twigs and branches should not be discounted.







TITLE



DATE



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GEOSPHERE ENVIRONMENTAL LTD

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP100BJ **T**: 01603 298076 | 01473 353519 | **E**: info@geosphere-environmental.co.uk | **W**: geosphere-environmental.co.uk