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Gladman Developments Ltd.

Land off Duke's Park, Woodbridge

Reptile Survey Report

November 2015

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FPCR Environment and Design Ltd
Registered Office: Lockington Hall, Lockington, Derby DE74 2RH
Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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1.0 INTRODUCTION

1.1 Gladman Developments Ltd. commissioned FPCR Environment and Design Ltd. to undertake a preliminary ecological appraisal of an area of land 12.67ha in size at Woodbridge, Suffolk. The objective of the study was to determine habitats and species present within the site and to assess their ecological value and whether they represented a potential constraint to a proposed application for outline planning permission for residential development.

1.2 The appraisal involved an initial extended Phase 1 Habitat Survey in March 2014 to determine habitats and species present within the site and to make an initial assessment of their ecological value and where appropriate, to identify the need for additional surveys.

1.3 The site is formed by four fields of species-poor neutral grassland, which has most likely developed naturally following abandonment of cultivation of the land. The northern part sits on a higher elevation with a vegetated bank separating this from the southern part. There is a single internal, species-poor hedgerow separating two fields in the northern half; the only other hedgerows are along the northern boundary and along part of the east boundary. Two mature trees were present within the site with a small number of semi-mature standards scattered across the site boundaries. There is no standing water habitat present, but a small ditch with a shallow flow partially bisects the southeast corner.

1.4 There was no evidence of any reptiles during the initial survey and most of the habitats present generally lacked the structural diversity required by most reptiles. Exceptions to this were:

- Land which formed the embankment for Top Street and Ipswich Road formed by a grassland/scrubland habitat mosaic which included the hedgerow which forms the north boundary of the site;
- The south facing bank separating the northern and southern parts of the site;
- The disturbed area situated within the southwest corner of the site which had a high structural diversity and large amounts of general debris which provided potential refuges for reptiles;
- Areas of bare ground and disused rabbit holes arising from the large rabbit population present around the site were considered to also provide potentially suitable habitat; the northern boundary of the site and the central bank being areas of particular note for these features;
- The railway line immediately adjacent to the southern boundary of the site was also considered to provide good habitat for reptiles with the warmer south side of the track providing the most suitable conditions. Railway embankments are known to be suitable habitat for reptiles, particularly common lizard which are present in Suffolk[1].

1.5 It was therefore considered possible that reptiles could be utilising the site and reptile surveys were recommended and subsequently commissioned. This report provides details of the survey.

[1] Suffolk Amphibian and Reptile Group. *Reptiles – Common/Viviparous Lizard Zootoca vivipara.* [webpage] Available at: http://www.sarg.org.uk/index.php?page=identification [Accessed 02/02/2015].

2.0 LEGISLATIVE AND PLANNING POLICY CONTEXT

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

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

2.2 This partial protection does not directly protect the habitat of these reptile species; however where these animals are present on land that is to be affected by development, the implications of the legislation are that providing that killing can reasonably be avoided, an operation is legal. Guidance provided by Natural England[2] and the Amphibian and Reptile Groups of the UK[3] recommends that this should be achieved by ensuring that:

- The animals must be protected from injury or killing;
- Mitigation is provided to maintain the conservation status of the species; and
- Following operations the population should be monitored.

2.3 All common reptile species are included on the list of species which are of principal importance for the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act. The S41 list is used to guide decision-makers, including local planning authorities, in implementing their duty under section 40 of the Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

2.4 The National Planning Policy Framework (NPPF)[4] sets out principles which ensure that development will not result in significant harm to biodiversity and geological conservation interests and wherever possible, alternatives are sought. Where proposals cannot reasonably be located elsewhere, the NPPF considers that adequate mitigation measures should be put in place, and where mitigation is not sufficiently adequate to prevent significant harm, compensation measures should be sought. Networks of habitats are viewed by the NPPF as a valuable resource, linking sites of importance and providing routes or stepping stones for migration, dispersal and genetic exchange of species in the wider context. Such networks should be protected from development and where possible, strengthened or integrated within it.

[2] English Nature. (2004). *Reptiles: guidelines for developers.* [on-line]. Peterborough: Natural England. Available from:.http://publications.naturalengland.org.uk/publication/76006?category=31018 [Accessed 02/02/2015]

[3] Amphibian and Reptile Group (no date). *Evaluating local mitigation/translocation programmes: Maintaining best practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARGs)*.

[4] Department for Communities and Local Government. (2012). *National Planning Policy Framework.* [Online]. London: Department for Communities and Local Government. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf [Accessed 02/02/2015]

3.0 METHODOLOGY

Desktop study

3.1 A desk study was undertaken as part of the initial Ecological Appraisal for the proposed development. As part of this process, Suffolk Biological Records Centre was contacted for existing records of reptiles within 1km of the site boundary.

Field Survey

3.2 A strategic reptile presence / absence survey was undertaken at locations identified as offering potential habitat within the site. The survey was undertaken based on methodology detailed in the Herpetofauna Workers Manual[5] and the Froglife Advice Sheet 10[6]. Methods involved a search for basking reptiles on/under naturally occurring refugia, and strategically positioned artificial refugia. The artificial refugia were placed in locations that offered the most suitable habitat for common reptiles; i.e. areas forming the junction between vegetation of different types and height, areas which formed a natural sun-trap, and areas of bare ground/short vegetation close to more dense stands of vegetation.

3.3 A total of 40 refugia were set out on 4th August 2014; their indicative location and numbers are shown in Figure 1. They were left undisturbed for over two weeks to enable any reptiles present to become accustomed to them. Thereafter, a series of 7 survey checks were undertaken, when suitable weather conditions existed, between 21st August and 30th September 2014, by a suitably experienced ecologist. The refugia were left undisturbed for a period of at least 1 day between each survey check.

3.4 The prevailing weather conditions during the survey checks are provided in Table 1. These include, wind, cloud cover, ambient temperature and any other notable weather.

Table 1: Date and Weather Conditions during Reptile Surveys

Survey	Date	Weather conditions 2 days prior to survey	Weather conditions of the night prior to survey	Time	Temp. (max/min) (°C)	Cloud cover / Rain/ Wind
1	21/08/2014	Sun with cloud/ no wind/ no rain/ 22-11°C	Sun with cloud/ no wind/ no rain/ 22-11°C	07:48	13.5	Sun/ wet grass from dew/ wind 1-3mph
2	04/09/2014	Sun with cloud/ wind 1-3mph/ no rain/ 19- 14°C	Sun with cloud/ wind 1-3mph/ no rain/ 19-16°C	07:00	16.1	Sun/ no rain/ no wind

5 Gent, T. & Gibson, S. (Eds.) (2012). *Herptofauna Workers' Manual*. Exeter: Pelagic Publishing

6 Froglife. (1999). *Froglife Advice Sheet 10: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife

3	09/09/2014	Sun with cloud and morning fog/ no wind/ no rain/ 19-11°C	Clear weather/ wind 6mph/ 17.2-12.2°C	17:15	18.7 / 16.6	No cloud/ no rain/
4	11/09/2014	Sun with partial cloud/ no wind/ no rain/ 20- 10°C	Sun with partial cloud/ no wind/ no rain/ 18-9°C	07:00	16 / 15.5	Cloudy/ wet ground/ wind 1-3mph
5	19/09/2014	Sun with partial cloud/ 9mph wind/ 21-16°C	Sun with no cloud/ 10mph wind	10:00	19 / 17.5	Light cloud/ no rain/ no wind
6	24/09/2014	Sunny with cloud/ wind 10-6 mph/ 16°C	Sunny with cloud/ wind 10mph	12:30	16 / 15	Sun/ cloud
7	30/09/2014	Sun with overcast to scattered cloud/ 19-15°C	Cloudy/ 16-14°C	09:00	18 / 15	Sun/ partial cloud/ no wind

3.5 The surveys also followed the guidelines recommendations by:

- Using roofing felt (0.5m^2) as artificial refugia, with a black upper side;
- Approaching refugia from downwind, avoiding casting a shadow, and with care, so as to not disturb basking animals when checking;
- Lifting and replacing tins, to check for the presence of reptiles underneath in hot weather was undertaken with care, to avoid potential harm to any animals underneath.

3.6 In addition to checking the artificial refugia, on each survey occasion the south west corner of the site was searched for reptiles. The disturbed nature of this area and the large volume of general debris present, were such that it was considered that if reptiles were utilising this area they would be using existing features for basking and sheltering. Consequently, any reptiles within this area would be unlikely to use additional refugia. On this basis it was considered that this particular part of the site could be more accurately surveyed by careful searching of existing artificial refugia.

3.7 Reptile populations were assessed according to the population level criteria stated in the *Froglife Advice Sheet 10*[6]. On this basis populations of different reptile species are divided into three population categories based on the total number of animals observed during individual survey occasions (Table 2).

Table 2: Key Reptile Site Survey Assessment Categories (*Froglife Advice Sheet 10*[6])

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

Survey Limitations

3.8 All surveys were carried out during suitable conditions and the results are therefore considered sufficient to adequately assess the presence or absence of reptiles and their population size (if present).

4.0 RESULTS

Desk Study

4.1 There were no statutory or non-statutory sites within the search area that had been designated as a result of the reptile populations they support.

4.2 Suffolk Biological Records Centre provided three records for reptiles from within the local area, as detailed in Table 3.

Table 3: Reptile Records within 1km of the Site Provided by Suffolk Biological Records Centre

Species	Date	Grid Ref	Distance From The Site	Number
Slow-worm *Anguis fragilis*	2012	TM263477	400m east	1 Adult Female
	2005	TM251481	450m northwest	Unspecified
Common lizard *Zootoca vivipara*	2007	TM263473	550m south	Unspecified

Field Survey

4.3 Table 4 below provides a summary of results for all reptile surveys undertaken. Appendix 1 provides full details of reptile survey results, including the locations within the site of individuals observed.

Table 4: Reptile Survey Results

Survey	Date	Common Lizard	Grass Snake	Adder	Slow Worm
1	21/08/2014	0	0	0	0
2	04/09/2014	1	0	0	0
3	09/09/2014	5	0	0	0
4	11/09/2014	5	0	0	0
5	19/09/2014	5	0	0	0
6	24/09/2014	14	0	0	0
7	30/09/2014	2	0	0	0

4.4 Only one species of reptile, common lizard, was identified. The maximum count was 14 (12 adults and 2 juveniles) on a single survey visit, which equates to a 'good' population based on current guidance[6] for assessment of population size (Table 2).

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 Common lizard were recorded on six of the seven survey occasions (Table 4); mainly along the northern boundary and the south facing bank in the centre of the site, but also in small areas of suitable habitat associated with the boundary fence abutting the residential area of Duke's Park on the east side of the site (See Appendix A and Figure 1).

5.2 In the absence of mitigation, construction operations would have the potential to result in the accidental killing or injuring of common lizard. Therefore, in accordance with the legal protection that this species is afforded, the following mitigation strategy is provided to demonstrate that killing or injuring of lizards can be reasonably avoided. Furthermore, to accord with best practice guidance3 there is a need to ensure that the current conservation status of the population is maintained, as such, the implementation of a post-construction monitoring programme is also recommended.

Reptile Mitigation Strategy

5.3 The current development framework plan indicates that the south facing bank and internal hedgerow will be lost as part of the development proposals. In addition, a proposed main access point and a convenience store will result in a loss and degradation of suitable habitat where lizards were recorded on the north boundary. This loss will be compensated by the creation of green infrastructure within the new development, which will provide habitat connectivity within the development and into surrounding land.

5.4 The main element of the mitigation strategy should be the translocation of lizards out of any area where they might be harmed. This will be achieved by a process of trapping and then translocation to an on-site receptor site located within the eastern extent of the site, which would be suitably fenced during the construction period to prevent the migration of any lizards back into the site during works. This process would be undertaken using the following methodology.

5.5 Trapping would continue until a reasonable capture effort has been achieved. Given the recorded population size it is considered that this would require approximately 60 suitable days of trapping. Translocation would cease when:

a) Within 60 days of trapping, common lizards have been shown to be absent from the entire site for a full 5 clear days of suitable weather, or;

b) If following 60 days of trapping a reasonable rate of capture has been achieved, subject to approval by Suffolk Coastal District Council.

5.6 Following the trapping and translocation, a hand and destructive search would be undertaken of appropriate site areas to ensure that the site is clear of lizards.

5.7 On completion of the development, the temporary fencing around the receptor site will be removed to enable the lizards to move back into the enhanced site areas. All works would be undertaken under the supervision of a suitably qualified ecologist.

5.8 To support the translocated population, habitat enhancements would be provided in the receptor site so that it provides optimum habitat conditions for common lizard both during and after the development work. Enhancements would include planting native scrub species, the creation of hibernacula and the subsequent long-term management to ensure the establishment of a tussocky sward. The topography of the area would be modelled so that it provides areas of south

facing banks/slopes which act as sun-traps to provide suitable basking conditions for the lizards; an element of bare ground would also be included within these sun-trap areas. In addition some specific works to make the rest of the green infrastructure suitable for lizards should also be undertaken.

5.9 The recommended enhancement to the receptor area, in combination with the habitat that the proposed development green infrastructure will provide, will compensate for the loss of existing suitable habitat for common lizard. This should ensure that the current conservation status of the recorded population is maintained. Implementation post development monitoring of the population for two years will provide the data to confirm this.

6.0 NON-TECHNICAL SUMMARY

- Gladman Developments Ltd. commissioned FPCR Environment and Design Ltd. to undertake an ecological appraisal of an area of land, 12.67 ha in size, located to the south of Ipswich Road and east of Top Street, Woodbridge. This was associated with a proposed application for outline planning permission for residential development.
- A Phase 1 Habitat Survey which formed part of the ecological appraisal identified most habitats present on site generally lacked the structural diversity required by most reptiles, exceptions were:
    - Land which forms the embankment for Top Street and Ipswich Road, including the northern site boundary;
    - the south facing boundary separating the northern and southern areas of the site;
    - The disturbed area situated within the southwest corner of the site which had a high structural diversity and large amounts of general debris;
    - Areas of bare ground and disused rabbit holes, particularly along the northern boundary of the site and the central bank;
    - The railway line which is immediately adjacent to the southern boundary of the site.
- As a result of the habitats identified, a specific survey for reptiles was recommended and subsequently commissioned.
- The reptile survey was undertaken during August and September 2014. The survey followed best practice methods and involved placing out a total of 40 artificial refugia and subsequently checking these on 7 occasions when weather conditions were appropriate. Existing refugia comprising general waste in the disturbed areas of the site were also checked.
- A desk top study was undertaken as part of the survey. This confirmed that slow-worm and common lizard had been recorded within the local area over the period 2005-07.
- The field survey identified a 'good'[6] population of common lizard (peak count 12 adults and 2 juveniles on a single survey occasion), no other species of reptile were recorded.
- It is concluded that the translocation of the on-site population to a receptor area which has been enhanced for common lizard will be necessary. This can be achieved via a trapping exercise during suitable weather conditions of approximately 60 days, subject to capture rate. A hand and destructive search will then be undertaken to ensure that the site is cleared of lizards. All works should be undertaken under the supervision of a suitably qualified ecologist. Once this is complete and development works cease, reptiles should be allowed to move back into the site.
- Management of the receptor area and the wider green infrastructure post development, should include objectives to provide suitable habitat for common lizard.
- It is considered that as a result of mitigation and enhancement proposals the favourable conservation status of reptiles will be maintained.

APPENDIX A

Table 1 Total Number of Individual Common Lizard *Zootoca vivipara* Observed Per Refugia

Refugia Reference Number	Survey Occasion (DD/MM/YY)						
	21/08/14	04/09/14	09/09/14	11/09/14	19/09/14	24/09/14	30/09/14
1			1M 1F 1J	1M 3F	1F	4F	
2					1F	1M	
11			1M		2F 1M	2F	1F
12						1M	
17						1M 2F	
20			1M	1 F			
21						1M	
28						1J	
30						1J	1M
35		1 Unk					
Total	**0**	**1**	**5**	**5**	**5**	**14**	**2**

KEY: M= Adult Male; F= Adult Female; J= Juvenile; Unk= Unknown

Study Area

Reptile Refugia Location (with Reference)

FPCR Environment and Desgin Ltd, Lockington Hall, Derby, DE74 2RH ▪ t:01509 672 772 ▪ f:01509 674 565 ▪ e: mail.fpcr.co.uk ▪ w: www.fpcr.co.uk ▪
masterplanning ▪ environmental assessment ▪ landscape design ▪ ecology ▪ architecture ▪ arboriculture ▪

J:\6100\6106\QGIS\Plans\6106-E-01 Reptile Refugia Plan.qgs

Gladman Developments Ltd.
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REPTILE REFUGIA PLAN

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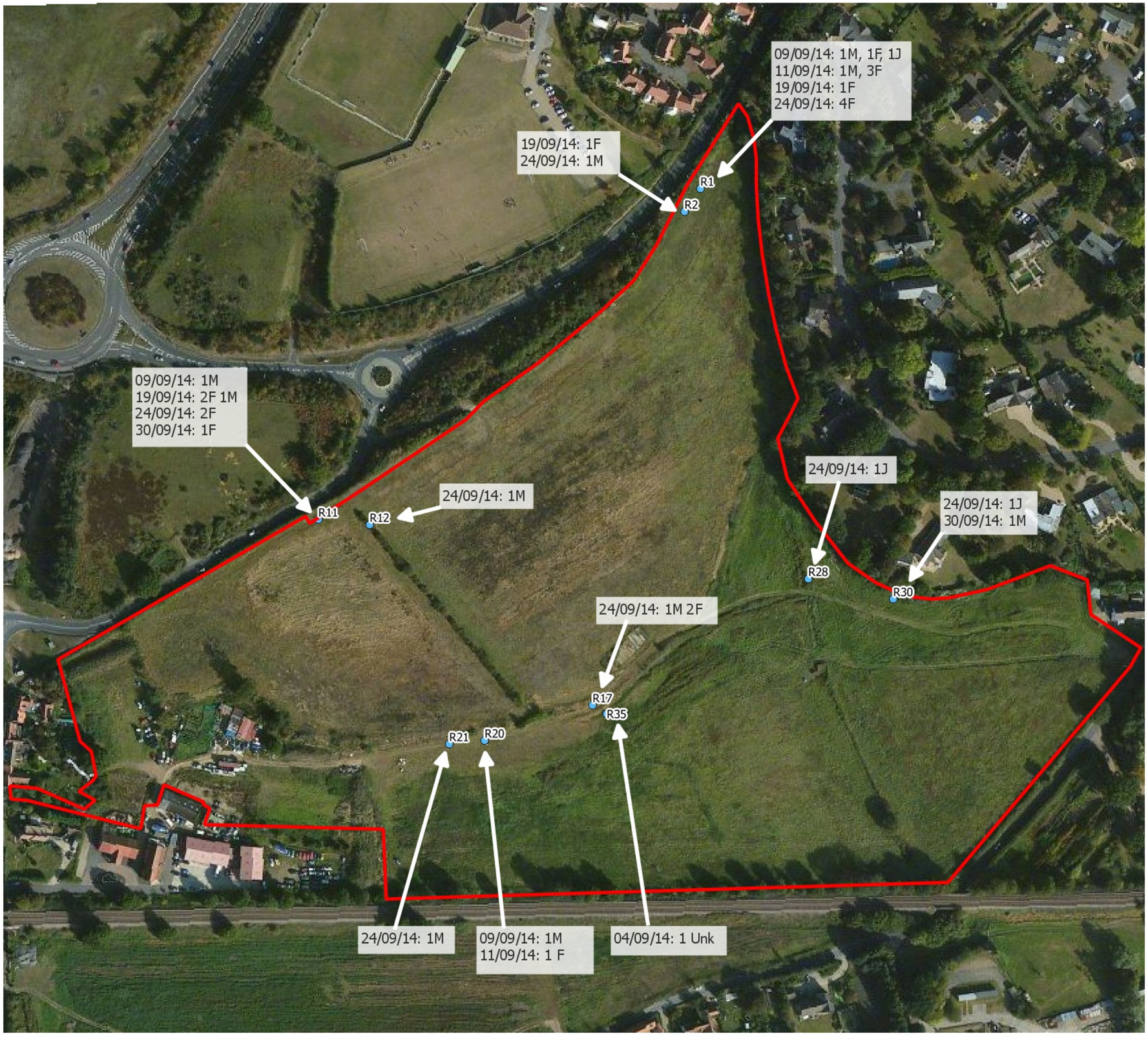
Scale: 1:2,225 | LG / TAE / NJL | 6/11/2015

Figure 1 | **6106-E-01**



Study Area

Reptile Tin Locations (with Reference)

M= Male
F= Female
J= Juvenile
Unk= Unknown

FPCR Environment and Desgin Ltd, Lockington Hall, Derby, DE74 2RH ▪ t:01509 672 772 ▪ f:01509 674 565 ▪ e: mail.fpcr.co.uk ▪ w: www.fpcr.co.uk ▪
masterplanning ▪ environmental assessment ▪ landscape design ▪ ecology ▪ architecture ▪ arboriculture ▪

J:\6100\6106\QGIS\Plans\6106-E-01 Location of Recorded Lizards.qgs

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Land off Duke's Park, Woodbridge

LOCATION OF RECORDED LIZARDS

Scale: 1:2,240 | LG / TAE / NJL | 6/11/2015

Figure 2 | **6106-E-01**