Moorlands Farm, West End, Southampton

Reptile Mitigation Strategy
February 2013

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1. INTRODUCTION

1.1 Overview

i. This document outlines the proposed strategy for the mitigation of potential impacts to reptiles as a result of the construction of a new training hall for the Hearing Dogs for Deaf People at Moorlands Farm, West End, Southampton.

ii. Suitable reptile habitat was identified around the edges of the site where areas of scrub are encroaching into longer, more structured areas of grassland. Further suitable areas were noted within the site including a wet ditch, rubble pile, a limited area of ground cover within a secondary woodland and an area of grassland which is irregularly grazed. The majority of the site is considered of poor suitability for reptiles being regularly grazed pasture. This pasture offers very little sward structure or diversity, there are also several outbuildings which will be subject to removal.

iii. A full presence / absence survey of the site has not been undertaken due to seasonal constraints, however the Local Planning Authority (LPA) have agreed that they would review a worst case scenario in terms of reptile mitigation and compensation on site. This would be based on the hypothetical presence of a high population of reptiles on site. The following mitigation and compensation strategy has therefore been prepared on this basis.

1.1.1 Site Description

Moorlands Farm is located off Botley Road, Southampton SO30 3HD (OS grid reference SU 481 145). The site comprises a semi-improved pasture and associated metal sheds / pole barns. The site is set in a semi-rural location, although bounded on the west by the M27 motorway, with the wider locality including arable fields, semi natural deciduous woodland, and buildings (**Image 1**). Moorgreen Meadows Site of Special Scientific Interest (SSSI) lies adjacent to the east of the site. Ecosupport Ltd carried out a Phase I Survey and prepared a suitable report for the site. This survey identified the need for further reptile survey work to be carried out. (Ecosupport Ltd, *Ecological Phase I Report, Moorlands Farm, West End, Southampton*. October 2012)

1.1.2 Proposed Development

It is proposed that the southern part of the pasture field has a new training hall for the Hearing Dogs for Deaf People Charity. This will also involve some new car parking and a new access road, which will require a small number of trees and bit of scrub to be removed. The tin barn buildings that fall within the site boundary will be removed as part of the proposals. The remainder of the field will be screened off from the new training hall by a native species hedgerow with this field used as an outdoor training area.

Image 1. Aerial image of the site with approximate boundary given in red.



1.2 Relevant Nature Conservation Legislation and Policy

1.2.1 Legislation

All native British reptiles receive protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Under this legislation the four 'widespread' species (Common *Lizard Zootoca vivipara,* Slow Worm *Anguis fragilis,* Grass Snake *Natrix natrix* and Adder *Vipera berus*) are protected from killing, injury and sale.

1.2.2 Planning policy

The legal protection of the 'widespread' reptile species and their inclusion on national and local BAPs confers additional protection through the planning system. The development would seek to comply with relevant Planning Policy, at a local and national level. Specific policies relevant to the protection of biodiversity and nature conservation within the Borough of Fareham are summarised below, for full details refer to the original documents.

- The Nation Planning Policy Framework (NPPF, 2012) sets out the government's commitment to biodiversity conservation through incorporation, where possible into planning policy. This supersedes Planning Policy Statement 9 (PPS9). NPPF places an onus on developments to *conserve and enhance* biodiversity with a requirement for positive biodiversity outcomes wherever possible from the overall development process.

- Local policy for this site falls within the jurisdiction of Eastleigh Borough Council. Their

commitment to biodiversity is outlined in the chapter seven of the Local Development Framework (LDF, Sustainability Appraisal, 2011). The document outlines a number of points pertaining to how the LDF can meet the overall objective of conserving and enhancing biologic and geologic diversity. These include how;

1. The LDF supports the provision of green infrastructure and biodiversity-friendly design and layout to enhance biological and landscape diversity.
2. Protected species are present throughout the borough meaning the LDF seeks to ensure that where development is necessary in areas containing these species, adequate mitigation is carried out before development commences. Monitoring of such species will also be necessary.
3. The LDF will support new developments, which avoids sensitive areas and seeks to support regional biodiversity networks.
4. The LDF aims to protect trees and woods and recognize their value to landscape, biodiversity, climate change, mitigation and adaptation, environmental quality and for the public realm. Planting of trees within developments should be encouraged.
5. The LDF will encourage an approach to development which supports a holistic approach to biodiversity requirements in the borough, incorporating green infrastructure, landscape protection and habitat provision.

1.3 Aims of the Mitigation Strategy

This reptile mitigation strategy details the measures which will be implemented in order to ensure that the proposed development would fully comply with legislation and planning policy relevant to the protection of reptiles should their presence be established on site. The two primary aims of the mitigation strategy are:

1) To prevent the killing or injury of reptiles as a result of works
2) To ensure local conservation status of the species is maintained at a favourable level.

1.4 A Worst Case Scenario

As a full presence / likely absence survey for reptiles was not possible (owing to the seasonal constraints), after consultation with the LPA, it was agreed that they would assess a worst-case mitigation strategy on the basis of a high population of reptiles within the suitable areas identified on the site. However, as the areas on site actually considered suitable for reptiles are limited, the numbers anticipated would it is considered be more reflective of a low – moderate population. This follows the stance adopted by Dorset County Council. Under this methodology, full surveys would still be required to determine the actual presence / likely absence and population size with the mitigation strategy amended accordingly, dependant on the results.

1.5 Status of Reptiles

1.5.1 Status in the UK

The distribution and status of the 6 reptile species found within the UK is provided in **Table 1** below (data taken from British Trust for Ornithology BTO research report 572 2011).

Species	Distribution	Status	UK BAP priority listed
Common Lizard (*Zootoca vivipara*)	Widespread but patchy	General decline	England, Scotland and Wales
Sand Lizard (*Lacerta agil*is)	Localised	Documented decline	England, Scotland and Wales
Slow-worm (*Anguis fragilis*)	Widespread	General decline	England, Scotland and Wales
Grass Snake (*Natrix natr*ix)	Widespread in England and Wales. Almost absent from Scotland except for introductions	General decline but current trends unknown	England, Scotland and Wales
Adder (*Vipera berus*)	Widespread, but restricted by habitat preferences	Declines in some areas	England, Scotland and Wales
Smooth Snakes (*Coronella austriaca*)	Localised, Dorset, Surrey and Hampshire heaths	Decline, but current trends unknown	England.

1.5.2 Status within Hampshire

Records for all six reptile species have been submitted to the Hampshire Amphibian and Reptile Group (HARG) between 2000 – 2010 (HARG, 2011). The most abundant records submitted were for Slow Worms and Common Lizards with 2087 and 727 respectively then Grass Snake (556) and Adder (490). The distribution of these records is fairly evenly spread throughout the county, however there is a noticeable concentration around the south-west where the New Forest is. Records of Sand Lizard (49) and Smooth Snake (47) are limited to heathland areas within Dorset.

2.0 THE STATUS OF REPTILES WITHIN THE DEVELOPMENT SITE

2.1 Introduction

A full survey has not yet been carried out meaning the actual status of reptile's onsite, both qualitatively and quantitatively, has yet to be defined. However, in order to allow the LPA to determine the application, presence will be assumed. The following factors were considered in determining the likely species of reptiles likely to be present:

- Desktop survey
- Habitat type
- Area of habitat available
- Linkages to areas of suitable surrounding habitat

No records were found during a search of the National Biodiversity Network (NBN) online database using a radius of 2 km form the site.

The majority of the site to be lost through the development is considered to be unsuitable for reptiles, dominated by poor semi- improved grazed pasture and buildings. There are however areas and features suitable for reptiles on site including; rough grassland scrub interface around the western and part of the northern boundary, a rubble pile with scrub, a Bracken (*Pteridium aquilinum*) patch and a ephemerally wet Hard Rush (*Juncus inflexus*) dominated ditch linked to an area of unmanaged poor semi-improved grassland.

The total area of what is considered to be suitable reptile habitat has been calculated at approximately 556 m^2. Although the total site area to be lost is 1, 820 m^2, the majority of this is grazed pasture grassland and as such does not support the structure and heterogeneity to support reptiles.

The site is surrounded by semi natural deciduous woodland, rough areas of grassland, the verges associated with the M 27, a stream, a pond and a Site of Special Scientific Interest (SSSI). Consequently the site can be considered to be well connected to surrounding suitable habitat.

2.2 Likely Population and Species Present

Based on the information discussed above and the habitat requirements of species as outlined within HARG (2011) it is considered that the following species and likely population sizes (all high based on a worst case scenario) would be on site. All population size assessments have been based on the assessment criteria outlined within HGBI (1998).

- Slow Worms – Likely to be present within the rubble pile and scrubby area and within the rough grassland area as a 'high' population (i.e. > 100 / ha).
- Common Lizard – Likely to be present within rubble and scrub pile as this is connected to the motorway verge as a 'high' population (i.e. > 80 / ha).

- Grass Snake – Likely to be present within the ephemerally wet ditch and linked rough grassland as this is bounded by a stream. Population present likely to be 'good' (i.e. > 4 / ha).

2.3 Valuation

In order to inform the assessment of impacts from the proposed development, it is necessary to evaluate the ecological features or resources (e.g. designated sites, populations of protected species, etc.) in nature conservation terms. The value of the reptile population on the site has been estimated following the IEEM guidelines on Ecological Impact Assessment (IEEM, 2006), which use a geographical scale to describe the value of an ecologically important feature.

Based on the above worst case scenario the Moorland Farm site is considered to be of *Local Value for Reptiles*. The species recorded on the site are relatively common within Eastleigh Borough and Hampshire and given the limited areas of suitable habitat, numbers caught are not anticipated to be high.

3.0 POTENTIAL IMPACTS ON THE REPTILE POPULATION WITHIN THE DEVELOPMENT SITE

This Chapter details the potential impacts of the proposed development on the hypothetical reptile population in the absence of mitigation. Pre-construction site clearance works are likely to cause the loss of areas of generally poor suitability habitat. The majority of the site is grazed, poor semi improved pasture and lacking in the structure favoured by reptiles, however there are isolated features of higher quality around the peripheries (i.e. a rubble pile, ditch, scrub / rough grassland **Image 2**). In total, the site has been calculated at approximately 6, 300 m^2 in area

Image 2. Ditch along the southern boundary of the site with the Hard Rush growth indicating periodical inundation (left) and rubble pile / scrub, suitable for hibernating and basking reptiles (right).





3.1 Habitat Loss

The total area of impact resulting from the development has been calculated at approximately 1, 820 m^2, however the habitats lost are of varying levels of suitability for reptiles. A detailed assessment of the habitat types affected and their potential suitability for reptiles is as provided below, with areas in the context of the whole site given in **Plan 1**:

- Poor semi –improved pasture grassland - The largest quantity of this habitat type will be affected by the development , with an approximate area of 1, 150 m^2 within the development area. Although classified as poor – semi improved during the Phase I habitat survey, it is currently grazed by cattle keeping the sward height low and reducing structure and heterogeneity. It should be noted that much of this area will be used as a dog training area and will be mown grassland, which is essentially similar in structure to grazed pasture. Therefore habitat of a similar structure and quality would be retained on the site.

- Rough grassland and Hard Rush ditch – Providing an optimal foraging and shelter habitat within a largely grazed landscape, the development will result in the total loss of the ditch

and partial loss of the grassland. The approximate area of this has been calculated at 376 m^2.

- Rubble pile and scrub – The permanent loss of approximately 60 m^2 of scrub and rubble pile habitat. This is considered highly likely to provide a daytime refuge for reptiles and act as a potential hibernacula. It is linked to other suitable habitat via a linear tree and scrub line bounding the west of the site.

- Shrubby understory within woodland – To facilitate the new access road approximately 120 m^2 of shrubs and woodland will be permanently lost. Generally considered to be of sub-optimal suitability for reptiles owing to the lack of structured grassland and heavy shading by trees. Any usage here would likely be transient with reptiles potentially using this area for foraging from the adjacent motorway verge.

- Buildings – Three metal construction barns will be demolished as part of the proposals totalling an area of 314 m^2.

4. MITIGATION STRATEGY

This mitigation strategy is intended to prevent any adverse impacts occurring to reptiles resulting from the development at Moorlands Farm. Where adverse impacts cannot be prevented or adequately mitigated, off-setting compensatory measures are proposed.

4.1 Site Set Up

Prior to any reptile capture taking place, the suitable habitat areas will be set up with exclusion fencing (where practicable) and artificial refugia. Where necessary, areas of the site will be fenced with reptile exclusion fencing of standard design, the purpose of which is to prevent reptiles moving onto the site during the capture operation and subsequent construction. Some areas (i.e.the shrubby understorey within the woodland and rubble pile) are isolated and it would not be practicable to use exclusion fencing. Within these areas the density of artificial refugia will be increased to ensure all reptiles are caught and a destructive search will be carried out after suitable capture effort has been expended. This work will be done prior to any construction works commencing on site and will be supervised by a SQE with details given in **Plan 2**.

Artificial bitumen roofing felt and corrugated tin capture refugia will be distributed within all areas of suitable reptile habitat within the exclusion fence to facilitate the capturing process.

4.1.1 Release area

Any reptiles found will be released into a 6 m buffer strip left to become rough and structured around the edges of the pasture field on the day of capture. As the habitat area to be permanently lost on site is limited, the numbers captured would it is considered likely be low. As the area of suitable habitat created by the buffer strip doubles that being lost, it is considered that it would be more than sufficient to sustain to population captured from the development site. In addition the release area will also be subject to management and habitat creation to improve the areas suitability for reptiles.

4.1.2 Capture and transport

Reptiles will be captured by hand by a SQE from beneath the artificial refugia, or wherever they are encountered on the site and placed into a suitable container and immediately placed into the receptor site.

4.1.3 Capture effort

The HGBI guidelines (1998) suggest that for "high" populations of Slow Worms, Common Lizards and Grass Snake, a density of at least 100 refugia for every hectare of suitable reptile habitat should be used over a minimum of 100 capture days (all suitable weather days between March – September are considered necessary). However, given that the area of suitable habitat to be lost is limited (0.0556 ha) 30 – 60 days would likely be sufficient to expend adequate capture effort and provide the five negative capture days required. However, if required capture days will be extended with further 5 additional negative days beyond the recommended 60 days if necessary.

4.1.4 Habitat manipulation

Once the capture operation is underway, habitat within the exclusion area may be manipulated in order to increase capture rates. Typically this would involve the strimming of areas of suitable habitat to reduce natural cover for reptiles and increase their reliance on the artificial refugia for cover. It will also concentrate remaining reptiles into parts of the site where the density of artificial refugia can be increased. Any habitat manipulation works will be carried out by a suitable contractor and under supervision of a suitably experienced ecologist to make sure these works are carried out without harming individual reptiles.

4.1.5 Timing

All work, which entails the capture of reptiles, would take place between March and September (depending on weather conditions). This timing avoids the hibernation period when reptiles would be particularly vulnerable to disturbance. Reptiles will not be translocated after the end of September in order to allow them sufficient time to find suitable hibernation sites at the release area.

4.2 Compensation & Receptor Site

As the proposals will result in the loss of reptile habitat, it is necessary to proportionately compensate for this through providing additional new habitat on site. The aim of this will be to replace qualitatively what has been lost.

Lost habitat will be compensated for through providing a new area of high quality reptile habitat, which will exceed the area of that lost. The features will be replicated to ensure that post development the reptiles still have a heterogeneous and varied habitat providing areas for foraging, hibernating and shelter. The buffer strip to be created will also act as the receptor site for any captured reptiles and be *in situ* prior to the implementation of the capture and exclusion.

4.2.1 Status of reptiles in the receptor site

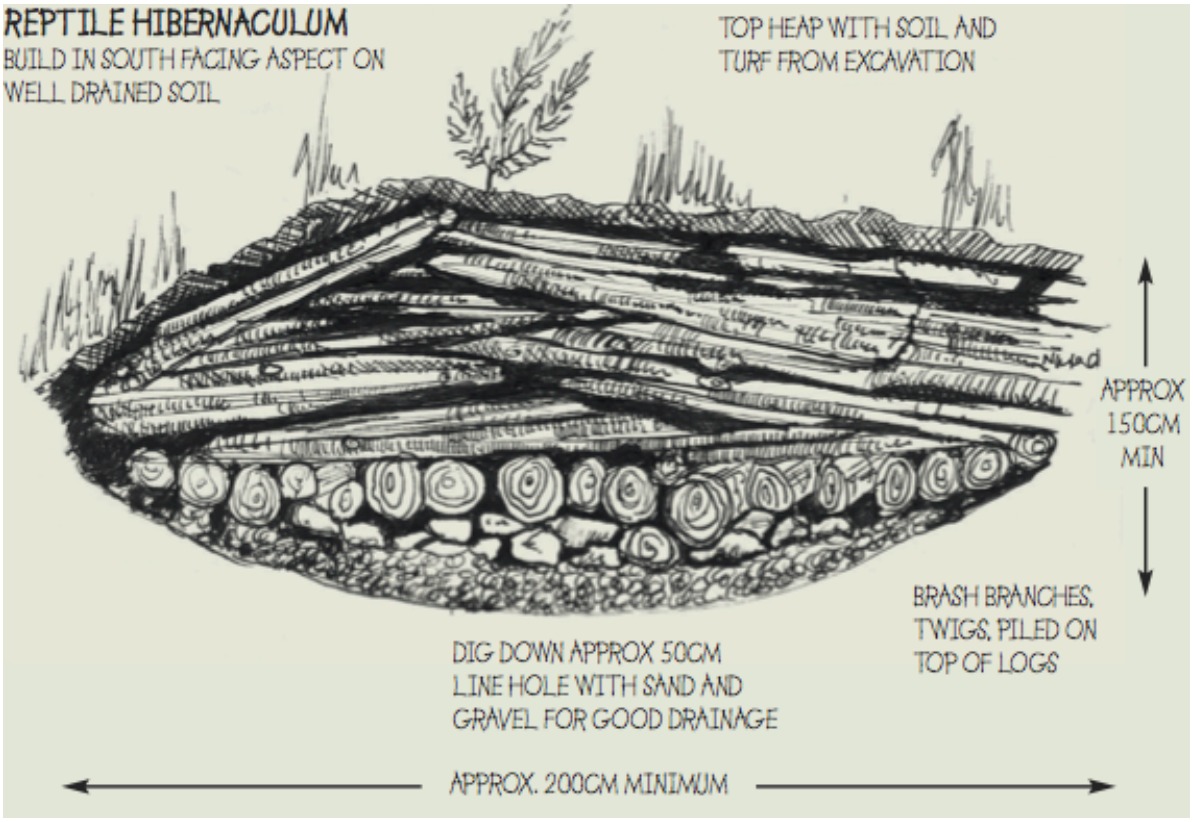
As surveys of the site have not yet been carried out, no details about the populations and species present within the receptor site are known however as the proposed buffer strip is currently being grazed it is unlikely that any significant numbers would be present.

4.2.2 Habitat replacement

The proposals will result in the permanent loss of 556 m^2 of medium to high quality reptile habitat. This will be compensated for through the provision of a 6 m wide strip around the western,

northern and eastern boundary of the site totalling 1, 338 m^2. This strip will be left unmanaged to provide the grassland structure and length required by foraging and dispersing reptiles and will develop into very high quality habitat. To aid in the development of the habitat prior to the site works commencing, a stock proof fence will be erected to prevent the livestock grazing within the 6 m buffer strip whilst maintaining the unsuitability of the remainder of the grassland. During this process the ecologist will visit the site monthly and remove any injurious weeds.
A total of three hibernacula will also be created following the specification outlined within *Reptile Habitat Management: Guidelines for Landowners* (HART, 2009)) (**Image 3**). The turf removed to allow for the hibernacula's to be dug will be retained and placed back on top after they have been completed (within the same day). In addition, log piles will be created within the buffer area which will provide shelter for reptiles and a significant habitat resource for invertebrates. The increased number of invertebrates will be a significant food resource for the moved reptiles and increase the ecological carrying capacity of the habitat.

Image 3. Reptile hibernaculum design as provided in HART (2009)



In order to replicate the ditch, a depression will be artificially created in the north eastern corner of the site of 15 m in length and 5 m wide. This will be seeded with a wildflower mix for damp soils to replicate the feature lost along the southern boundary of the site (**Image 2**) and create habitat suitable for a variety of invertebrates which will be a significant food source for reptiles and provide a damp habitat favoured by Grass Snakes.

A further linkage between suitable habitat areas will be provided by the screening hedgerow to be planted between the new building and the dog training field. This will have a 0. 5 m strip left unmanaged beneath it to provide a dispersal corridor for any reptiles on site.

It is considered that should this mitigation and compensation scheme be implemented, sufficient high quality habitat will be created to compensate for the generally low quality habitat lost as a result of the development. Therefore the favourable local conservation status of any reptiles on site will be maintained and no significant impacts to the species are considered likely to occur as a result of the proposed development. All compensatory measures are provided in **Plan 2**.

4.3 Post Development Management and Site Safeguard

- The site will be safeguarded from development through the deeds of the new training hall to show that the area put aside for reptile habitat is safeguarded in perpetuity.

- The compensatory habitat area will be monitored over a 10 year period to ensure that the grassland does not become overly scrubbed, maintaining suitability for reptiles.

- Funding for the mitigation and post development monitoring will be provided by the Hearing Dogs for Deaf People Charity secured through the deeds of the property.

5.0 TIMETABLE

Activity / Timing	March 13	June 13	August 13	September 13
Strim line of fence				
Install reptile exclusion fencing				
30 – 60 days capture days capture				
Destructive search				
Removal of fencing				
Compensation works				
Construction begins				
Monitoring (to occur on same month annually for 10 years)				

6. REFERENCES

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Legend

PLAN 1

Areas of Suitable Reptile Habitat Lost

Ditch 176m^2

Rubble pile and scrub 60m^2

Shrubby understory within woodland 120m^2

Rough unmanaged grassland 200m^2

Project Name:	Client:
Moorlands Farm	**The Hearing Dogs for Deaf People Charity**
Title:	Date:
Suitable Habitat loss	**February 2013**

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Legend

PLAN 2

Areas subject to daily capture and destructive search

6-meter wide release area strip alongside boundary 1, 338m^2. Stock fencing installed on the inner

Native species screening hedgerow- providing linkage between suitable habitat areas

Artificial depression to replicate the existing ditch lost too development

Reptile hibernacula

Reptile exclusion fencing to be installed and area subject to daily capture

Project Name:	Client:
Moorlands Farm	**The Hearing Dogs for Deaf People Charity**
Title:	Date:
Mitigation & Compensation	**February 2013**

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