

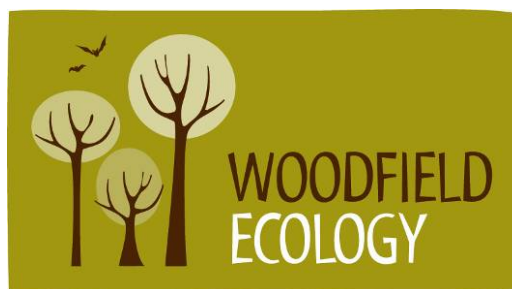
## Appendix 6.3

# Reptile Survey Report

# **LINHAY HILL QUARRY**

## **ENVIRONMENTAL STATEMENT - REGULATION 22 FURTHER INFORMATION**

### **REPTILE SURVEY REPORT**



*On behalf of E & JW Glendinning Ltd.*

MARCH 2017

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## CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>1.1</b>	<b>OVERVIEW.....</b>	<b>1</b>
<b>1.2</b>	<b>PRE-EXISTING SURVEY INFORMATION .....</b>	<b>1</b>
<b>1.3</b>	<b>SURVEY OBJECTIVES.....</b>	<b>1</b>
<b>2.0</b>	<b>METHODOLOGY .....</b>	<b>2</b>
<b>2.1</b>	<b>FIELD SURVEY .....</b>	<b>2</b>
<b>2.2</b>	<b>POPULATION CLASS ASSESSMENT .....</b>	<b>3</b>
<b>2.3</b>	<b>BASELINE EVALUATION CRITERIA .....</b>	<b>3</b>
<b>2.4</b>	<b>DATES OF SURVEY, WEATHER CONDITIONS &amp; PERSONNEL.....</b>	<b>3</b>
<b>2.5</b>	<b>LIMITATIONS .....</b>	<b>4</b>
<b>3.0</b>	<b>RESULTS .....</b>	<b>5</b>
<b>3.1</b>	<b>FIELD SURVEY .....</b>	<b>5</b>
<b>3.2</b>	<b>POPULATION CLASS ASSESSMENT .....</b>	<b>6</b>
<b>4.0</b>	<b>VALUATION .....</b>	<b>7</b>
<b>5.0</b>	<b>IMPLICATIONS FOR ENVIRONMENTAL STATEMENT .....</b>	<b>8</b>

## LIST OF FIGURES

**FIGURE 1: REPTILE SURVEY: REFUGIA SAMPLING LOCATIONS & RESULTS**

## 1.0 INTRODUCTION

### 1.1 OVERVIEW

Woodfield Ecology was commissioned to carry out further reptile surveys on behalf of E&JW Glendinning Ltd. in response to the Linhay Hill Quarry Extension Environmental Statement (ES) Regulation 22 Request (Amec Foster Wheeler, December 2016).

The following report relates specifically to the request for the applicant to '*provide results of a reptile survey for the area alongside Alston Lane and also the area bordering Waye*' (Item 21, Table 2.1: Regulation 22 Requests).

### 1.2 PRE-EXISTING SURVEY INFORMATION

The majority of the proposed Extension Area was found to be largely sub-optimal for reptiles given its intensive use and management for turf production, livestock grazing and / or hay, with hedgerows considered too heavily shaded to support reptiles. However, suitable habitat was recorded in the immediate vicinity, including scrub-fringed grassland in / around Alston Farm and more steeply sloping fields to the north-east. Further surveys were subsequently undertaken during 2015 within these habitats which confirmed the presence of a 'low' population of Slow-worm *Anguis fragilis* within a paddock immediately to the west of Alston Farm (outside of the red line boundary), but concluded a likely absence of reptile species from all other areas surveyed (refer to Technical Appendix 10.1g of the *Extension to Linhay Hill Quarry - Environmental Statement*, (Atkins, June 2016).

For the most-part, the Waye Lane Replacement Route was also assessed as being unsuitable for reptiles, with only small / fragmented areas of suitable habitat recorded within the existing narrow track verges or in adjoining field margins. On this basis, the ES detailed phased / sensitive vegetation clearance to be carried out in these areas on a precautionary basis, and further surveys of this part of the site had previously been scoped out.

### 1.3 SURVEY OBJECTIVES

In order to address the ES Regulation 22 Request, the purpose of this assessment was to confirm the presence or likely absence of reptiles from suitable habitats alongside Alston Lane and Waye Lane Replacement Route (collectively referred to as the 'survey area' as shown on Figure 1). Where reptiles were found to be present, population size estimates for each species are given and an overall evaluation provided. Finally, a review of

mitigation measures previously presented in the Linhay Hill Quarry Extension ES Ecology Chapter is undertaken, with recommendations for any changes necessary made.

## 2.0 METHODOLOGY

### 2.1 FIELD SURVEY

A presence/likely absence survey was undertaken with regard for guidance within the Herpetofauna Workers' Manual (HGBI, 1998) and the methodology within Reptile Survey Advice Sheet 10 (Froglife, 1999).

The survey comprised a series of seven visits carried out between September – early October 2016, each incorporating two elements:

- Survey of artificial refugia; and
- Visual observation of habitats and natural refugia present – Direct Observation Survey (DOS).

In late August 2016, a total of 91 artificial reptile refugia were deployed within the areas of previously identified suitable habitat across the survey area as shown on Figure 1. Refugia consisted of bitumen roofing felt mats approximately 0.5 x 0.5m which were deployed at a high density to increase the chances of detection if present. The refugia were left undisturbed for over 12 days prior to commencement of the survey to allow them to settle and give reptiles sufficient time to locate them.

During each survey visit, refugia were approached from downwind (where practical), casting no shadow and with care so as to not disturb any basking animals. The location, species, number, life stage and where possible sex of all individual reptiles found to be using the artificial refugia were recorded.

At the same time as checking refuges, Direct Observation Surveys (DOS) were also carried out. This involved searching for reptiles that were basking in the open or using natural refugia (e.g. stone, rubble and log piles) by walking carefully and slowly around the survey area and looking in areas where reptiles could be present.

Reptiles are ectothermic animals, deriving their body heat from the external environment; therefore, the timing of the survey visits was dictated by weather conditions, in accordance with best practice guidance (Froglife, 1999). Each of the seven survey visits were undertaken in optimal weather conditions as far as possible (air temperature between 9 and 18°C with wet and windy days being avoided). All surveys were completed within the appropriate season in which reptiles are active (March to early-October). The survey dates and weather conditions are given in Section 2.4 below.

## 2.2 POPULATION CLASS ASSESSMENT

In accordance with HGBI (1998), the reptile populations recorded during the survey were categorised into a population size class. Table 1 below summarises the thresholds used for calculating class size for the four widespread species of reptile.

**Table 1: Reptile Population Class Estimates based on Adult Density (HGBI, 1998)**

Species	Low Population	Medium Population	High Population
Slow-worm	<50 / ha	> 50 / ha	>100 / ha
Common Lizard	<20 / ha	>40 / ha	>80 / ha
Adder	<2 / ha	2-4 / ha	>4 / ha
Grass Snake	<2	2-4 / ha	>4 / ha

## 2.3 BASELINE EVALUATION CRITERIA

The ecological valuation is based on the guidelines set out in Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal (CIEEM, 2016). The known or potential value of an ecological resource or feature is determined within the following geographical context:

- International and European;
- National;
- Regional (South West England);
- County (Devon);
- Local (with further sub-levels as appropriate).

## 2.4 DATES OF SURVEY, WEATHER CONDITIONS & PERSONNEL

The dates for each of the survey visits and summary weather conditions are shown in Table 2 below.

**Table 2: Reptile Survey Dates and Weather Conditions**

Visit No.	Date	Survey Method	Weather	Start Time	End Time
N/A	29/08/2016	Deployment of reptile refugia	N/A		
1	09/09/2016	Refugia Check & DOS	Mostly dry with occasional light drizzle, overcast (cloud cover 100%), light breeze (Beaufort 2-3), warm (17°C).	10.30	12.00

Visit No.	Date	Survey Method	Weather	Start Time	End Time
2	14/09/2016	Refugia Check & DOS	Dry, overcast with sunny spells (cloud cover 75%), light breeze (Beaufort 2), warm (18.5°C).	09:30	11.00
3	19/09/2016	Refugia Check & DOS	Dry (rain earlier in the day), overcast (cloud cover 95%), light breeze (Beaufort 1), warm (17°C).	15:15	16.45
4	22/09/2016	Refugia Check & DOS	Dry, bright sunny spells, light breeze (Beaufort 1), cloud cover 40%, warm (17.5°C).	14.30	16.00
5	25/09/2016	Refugia Check & DOS	Dry, bright & sunny, light breeze (Beaufort 2), cloud cover 5%, mild (16.5°C).	16.00	17.30
6	30/09/2016	Refugia Check & DOS	Dry (except for a very brief shower at 15:00), overcast with bright spells, light breeze (Beaufort 2), cloud cover 20%, warm (17.5°C).	14.00	15.30
7	03/10/2016	Refugia Check & DOS	Dry, sunny / bright, light breeze (Beaufort 2), cloud cover 75%, mild (16.5-17°C).	16.30	18.00

All surveys were carried out by Becky Prudden MCIEEM. Becky has over 15 years' experience as a consultant ecologist and is a skilled field ecologist with strong herpetofauna survey skills.

## 2.5 LIMITATIONS

No major limitations which could potentially reduce confidence in the findings were encountered whilst completing the surveys.

Six of the reptile refugia (Nos. 80-85) which were deployed at the south-western end of the Waye Lane Replacement Route close to South Dartmoor Community College were subject to periodic disturbance / interference over the course of the survey visits. However, as refugia were deployed at a higher density than the recommended minimum (of between 5-10 refugia per hectare), this is not considered a significant limitation.

## 3.0 RESULTS

### 3.1 FIELD SURVEY

The results of the reptile survey are shown in Table 3 below with the location of reptile sightings indicated on Figure 1.

**Table 3: Reptile Survey Results (including records of incidental amphibian sightings)**

Visit No.	Date	Refugia No.	Results	Total No. of Reptile Sightings (adults)
1	09/09/2016	5	2 Slow-worm (adult female)	3 Slow-worm
		9	1 Slow-worm (adult female)	
		10	1 Slow-worm (hatchling)	
		(66)	(1 Common Toad - adult)	
2	14/09/2016	1	1 Slow-worm (adult male)	3 Slow-worm
		5	1 Slow-worm (adult female)	
		9	1 Slow-worm (adult female)	
		(21)	(1 Common Toad – juvenile)	
		(33)	(1 Common Toad – juvenile)	
3	19/09/2016	1	1 Slow-worm (adult female)	4 Slow-worm
		5	1 Slow-worm (hatchling)	
		7	2 Slow-worm (adult female)	
		11	1 Slow-worm (adult female)	
4	22/09/2016	1	1 Slow-worm (adult female)	6 Slow-worm
			2 Slow-worm (hatchlings)	
		5	4 Slow-worm (adult female)	
5	25/09/2016	9	1 Slow-worm (adult female)	1 Slow-worm
6	30/09/2016	5	1 Slow-worm (adult female)	3 Slow-worm
		7	1 Slow-worm (adult female)	
		9	1 Slow-worm (adult female)	
		(52)	(1 Common Toad – juvenile)	
7	03/10/2016	5	1 Slow-worm (adult female)	2 Slow-worm
		7	1 Slow-worm (adult female)	

The reptile survey confirmed the presence of Slow-worm at refugia nos. 1, 5, 7, 9, 10 and 11 all of which were located within the narrow strip of grassland along the north-eastern edge of the existing quarry, adjacent to Alston Lane. No reptile sightings were made in any of the other locations surveyed, including anywhere along the length of the Waye Lane Replacement Route.



With regards to other herptiles, sightings of low numbers of Common Toad were recorded using the artificial refugia (refer to Table 3 above for refugia numbers), with records scattered along the Waye Lane Replacement Route.

### **3.2 POPULATION CLASS ASSESSMENT**

A quantitative population assessment was conducted using the maximum count of adult reptiles recorded on any one survey visit, as per the methodology described in section 2.2 (HGBI, 1998).

Based on a broad estimate of there being c. 0.5ha of reptile habitat within the survey area along Alston Lane, and with comparison to the thresholds given in Table 1, the population of Slow-worms present along the north-eastern edge of the main quarry / adjacent to Alston Lane is assessed as 'low'.

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## 4.0 VALUATION

The reptile survey confirmed the presence of a 'low' population of Slow-worm within the narrow grassland strip along the north-eastern edge of the existing quarry which runs parallel with Alston Lane. Whilst only low numbers were found within a restricted area, the presence of hatchling Slow-worm indicates, this is a stable (breeding) population.

Given the lack of sightings elsewhere within the survey area, and the distance of habitats from the recorded population, a likely absence of reptile populations was concluded along the length of the Waye Lane Replacement Route.

With regards incidental records made of other notable species of herptiles, sightings of individual Common Toads were made on three separate occasions, confirming the presence of this species (albeit in low numbers) along the Waye Lane Replacement Route. Common Toad is listed as a Species of Principal Importance (SPI) under Section 41 of the NERC Act 2006.

Overall, the vast majority of the survey area was found to be of negligible value to reptiles. Where the presence of a low population of Slow-worm was detected along the north-eastern edge of the main quarry / alongside Alston Lane, this is considered to be of **Local** value.

## 5.0 IMPLICATIONS FOR ENVIRONMENTAL STATEMENT

The results of the current survey are not considered to change the overall valuation of the wider site for reptiles as previously reported in Chapter 10 of the Environmental Statement, which is still considered to be of **Local** value overall for this ecological feature.

With regards to the assessment of potential impacts on reptiles, the findings of the current survey have confirmed the following:

- In the absence of mitigation, there is a known risk of killing / injuring reptiles during Stage 1a construction period when the narrow strip of grassland along the north-eastern edge of the existing quarry is lost as the quarry is extended.
- The risk of killing / injuring reptiles during Stage 0 construction period along the Waye Lane Replacement Route is considered to be reduced from 'low' (as reported in Chapter 10 of the ES) to 'negligible', based on the likely absence concluded from this part of the survey area.

No changes to the operational impacts or overall residual effects as previously reported are considered to occur.

Based on the findings of the current survey, minor changes to the proposed mitigation strategy for reptiles as outlined in ES Technical Appendix 10.3 *Outline Ecological Mitigation & Enhancement Strategy (EMES) Stages 0-5* will be necessary.

Mitigation for reptiles as previously set out in the EMES was as follows:

*"All construction activity within suitable reptile habitat along the Waye Lane Replacement Route would be undertaken at appropriate times of year (i.e. during the active reptile season, April to October), and following habitat manipulation to displace reptiles into adjacent suitable retained habitat, under an ecological watching brief.*

*A detailed method statement would be produced to specify the sequence of measures to be employed to displace any reptiles which would include:*

- *vegetation to be cut from the centre of the works area outwards, with hand operated cutters between May and mid-September only during warm (> 15°C) weather;*
- *areas of vegetation over 5m wide would be removed over a number of days to enable the gradual migration of reptiles;*

- *vegetation will be cut down to c. 15 cm, then a second cut would be taken 48hrs later, taking vegetation down to ground level. Arisings would be removed from the works area at all stages, and*
- *where areas cannot be completely cleared of vegetation due to roots, stumps or boulders then they will be isolated by vegetation removal followed by hand removal / searching under ecological supervision.”*

Based on the likely absence of reptiles along the Waye Lane Replacement Route as found during the current survey, the above mitigation measures are no longer considered necessary.

However, a detailed method statement will now be necessary setting out measures to safeguard the low population of Slow-worm present along the north-eastern edge of the main quarry prior to impacts occurring during Stage 1a which would include the following:

- Reptile capture and relocation using densely placed artificial reptile refugia which would be checked over c.20 visits (fewer or additional visits may be necessary to achieve five consecutive visits with no reptile captures / sightings) during suitable weather conditions at a period when reptiles are active and able to respond to disturbance (April – early October).
- Due to the small size of the recorded Slow-worm population, all captured individuals will be relocated immediately to nearby suitable habitats within E & JW Glendinning Ltd. ownership, which could include grassland along the retained south-facing slope of the existing quarry.
- Following on from the translocation, grassland habitats will be cleared under a destructive search to be undertaken between April – early October under an ecological watching brief (at the start of Phase 1a). All hedges adjoining this grassland strip will also be removed and translocated under a watching brief (with regards to the potential presence of Dormice), which will also include a search for any remaining reptiles.

The proposed enhancement and management measures for reptiles as set out in the EMES are considered to remain appropriate for the recorded reptile populations.

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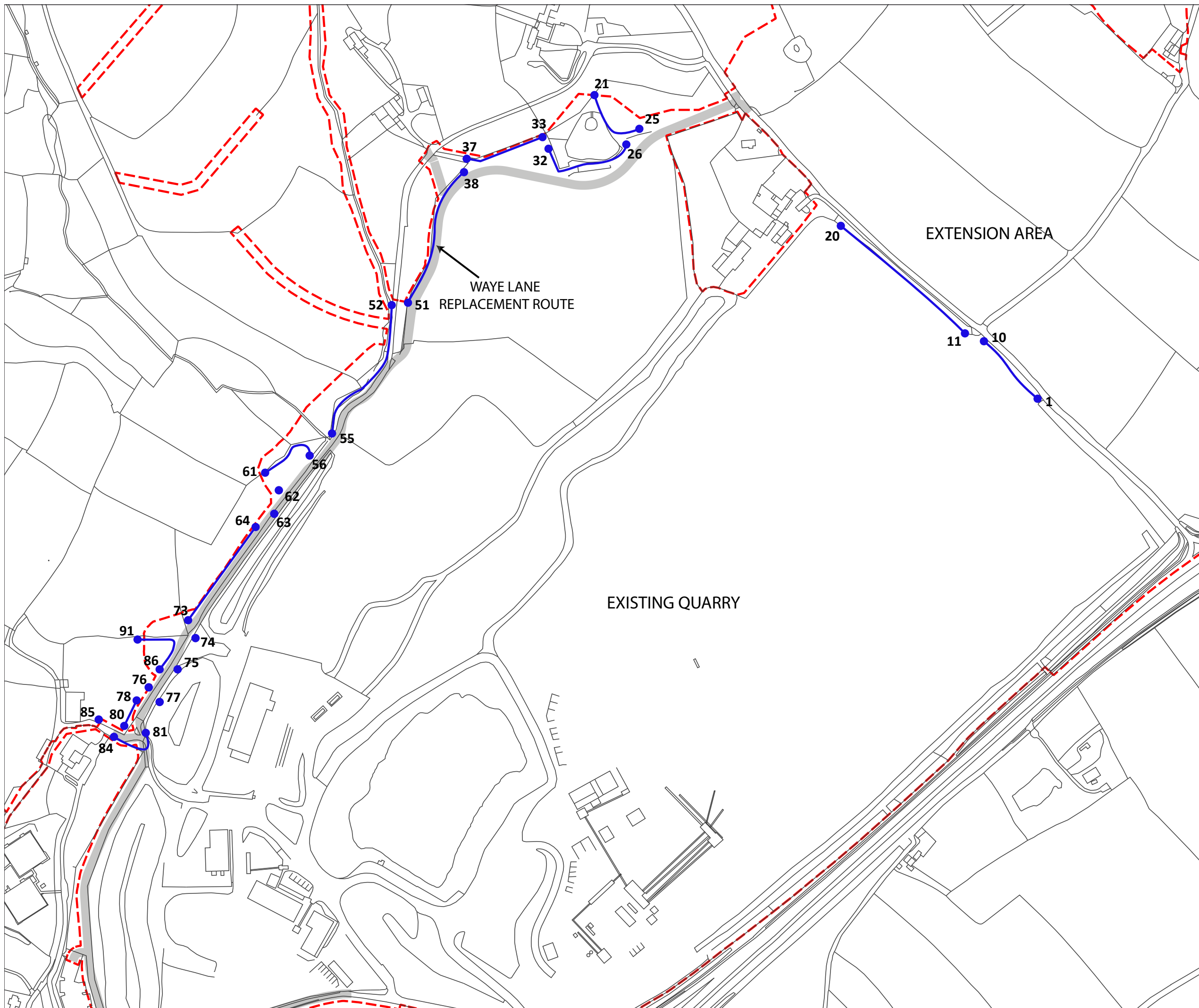
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Red Line Boundary  
 Reptile Refuge Locations

10 13

**LINHAY HILL QUARRY EXTENSION:  
 Regulation 22**

Way Lane and Alston Lane  
 Reptile Surveys 2016

Figure 1



