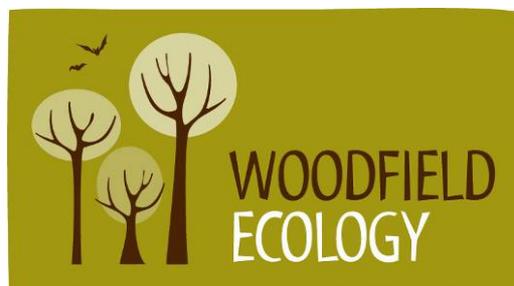


Appendix 10.1g

Extension Area – Reptile Survey Report

LINHAY HILL QUARRY: EXTENSION AREA

REPTILE SURVEY REPORT



On behalf of E & JW Glendinning Ltd.

MARCH 2016

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SUMMARY

E&JW Glendinning Ltd. is proposing an extension of their existing operation at Linhay Hill limestone quarry, near Ashburton. The site being considered for the extension lies immediately north-east of the existing quarry is currently managed as mixed farmland associated with Alston Farm.

Small areas of suitable habitat for reptiles were identified on Site during the Extended Phase 1 habitat survey carried out in April 2014, predominantly in / around the farmyard at Alston Farm. Accordingly a reptile presence / absence survey was undertaken across areas of suitable habitat between May – September 2014 and comprised a series of seven visits to check c. 74 artificial refugia as well as undertake visual observation of habitats and natural refugia present to search for basking reptiles.

The reptile surveys confirmed the presence of a 'low' population of Slow-worm within the paddock to the west of Alston Farm, but concluded a likely absence of other reptile species or reptile populations elsewhere within the survey area. Given the fact that only a single adult Slow-worm was recorded across the survey visits and no evidence of breeding was found, this is considered to be a remnant / unstable Slow-worm population. Incidental records were also made for low numbers of Common Toad, which is listed as a Species of Principal Importance (SPI) under Section 41 of the NERC Act 2006.

Overall, the vast majority of the Site is considered to be of negligible value to reptiles. Where presence of a low population of Slow-worm was detected close to Alston Farm, this is considered to be of Local value.

1.0 INTRODUCTION

1.1 OVERVIEW & SURVEY OBJECTIVES

Woodfield Ecology was commissioned to carry out a reptile survey on behalf of E&JW Glendinning Ltd. of land to the north-east of Linhay Hill Quarry near Ashburton, Devon. The area of land is being proposed for a quarry extension to extend the operational lifespan of this working limestone quarry.

The land for the proposed extension (hereafter referred to as “the Site”) is owned by E&JW Glendinning Ltd., which together with associated screening, infrastructure and mitigation, covers an area of c. 47 hectares situated within the south-eastern edge of Dartmoor National Park, in and around Alston Farm (centred on NGR SX776717).

The purpose of this assessment was to confirm the presence or likely absence of reptiles from within the Site and where present, estimate population sizes for each species present in order to evaluate the importance of the Site with regards the reptile populations it supports.

The results of the reptile surveys are detailed within the following report.

1.2 CONSERVATION STATUS & PROTECTION

1.2.1 Conservation Status

Over the last 50 years, many areas that used to be home to reptiles have been lost to development, agriculture and forestry. Changes in land use, intensified management, persecution, collection, fires, fragmentation of habitats and increased public pressure have also reduced reptile populations (English Nature, 2004).

With regards distribution of the six terrestrial reptile species in the UK, the Adder *Vipera berus*, Common Lizard *Zootoca vivipara*, Grass Snake *Natrix natrix* and Slow-worm *Anagallis fragilis* remain relatively widespread across England, though their distribution can be locally very patchy, especially the Adder. The Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* have a much more restricted distribution.

All four widespread native British reptile species are commonly occurring throughout Devon. Whilst Sand Lizards have recently been re-introduced to Devon, they are confined to only a small number of heathland sites and dune systems and are therefore not considered further in the context of this Site.

1.2.2 Legal Protection

The six native species of reptiles in the UK are afforded varying degrees of legal protection, reflecting their differing distributions and conservation status, as follows:

- The Adder, Common Lizard, Grass Snake and Slow-worm are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) from killing and injury;
- The Sand Lizard and Smooth Snake are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are also European Protected Species (EPS) under Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (as amended) with additional protection afforded to their habitat.

Under Section 40 of the Natural Environment and Rural Communities (NERC) Act (2006) public bodies, including local planning authorities have a duty to have regard for the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act the Secretary of State has published a list of species considered to be of Species Principal Importance (SPIs) for conserving biodiversity in England. All reptile species are listed as SPIs and as such are afforded priority when public bodies apply the requirements of the NERC Act (2006) to maintain, restore and enhance species and habitats. Other herptiles also listed as SPIs and referenced within this report are Common Toad *Bufo bufo*.

1.2.3 Planning Policy

The National Planning Policy Framework (NPPF) forms the basis for planning decisions with respect to conserving and enhancing the natural environment. The ODPM circular 06/2005 provides supplementary guidance, including confirmation that the presence of a legally protected species may be a material consideration in the making of planning decisions.

The NPPF sets out, amongst other points, how at an overview level the 'planning system should contribute to and enhance the national and local environment' by:

- *recognising the wider benefits of ecosystem services; and*
- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...*

A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF. They include the following:

- *'if significant harm resulting from a development cannot be avoided...adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *...opportunities to incorporate biodiversity in and around developments should be encouraged.'*

In addition, the Dartmoor National Park Core Strategy and Development Management and Delivery Development Plan Document (DPD) include a number of policies which include for protected species:

- *'protect, maintain or enhance the biodiversity interests, and seek opportunities to restore or recreate habitats or linkages between them;*
- *further the conservation and enhancement of nationally protected species or habitats;*
- *conserve, enhance or restore priority habitats and species;*
- *protect and where appropriate enhance other defined sites, features, habitats, species, networks or natural processes of ecological importance;*
- *ensure that effective avoidance or mitigation measures are implemented (which may include off-site compensation); and*
- *result in no net loss of biodiversity.'*

All six reptile species also receive targeted conservation efforts through their listing as Priority Species under the UK Biodiversity Action Plan (UK BAP).

1.3 PRE-EXISTING SURVEY INFORMATION & RECORDS

In April 2014, an Extended Phase 1 Habitat Survey was completed by Woodfield Ecology which was supported by an ecological desk study exercise. Records of legally protected species and species of conservation concern were requested from Devon Biodiversity Records Centre (DBRC) for the Site and within a 2km radius. No records of reptile species were returned during the desk study, although this was not considered a reliable indication of absence given that the study area fell within the known distribution for the four widespread native British reptile species, namely Adder, Common Lizard, Grass Snake and Slow-worm.

During the Extended Phase 1 Habitat Survey, small areas of suitable habitat for reptiles were identified and included unmanaged grassland and scrub fringing the farmyard at Alston Farm, a scrub-fringed field in the north-east of the Site and the margins of a small under-grazed paddock west of Alston Farm. Whilst the whole Site has a southerly aspect, due to the aforementioned intensive use of fields for turf production, livestock grazing and hay crops, unmanaged / infrequently managed habitats were small and scattered within the Site. The extensive network of hedgebanks within the Site was considered too heavily shaded by over-hanging shrub vegetation (and lacked unmanaged margins) to support viable populations of reptiles.

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 to the Site during late May – September 2014, each incorporating two elements:

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

In early May 2014, a total of 74 artificial reptile refugia were deployed within the areas of previously identified suitable habitat across the Site as shown on Figure 1. Refugia consisted of bitumen roofing felt mats approximately 0.5 x 0.5m which were deployed at a considerably higher density than the recommended minimum (between five and ten refugia per hectare, (Froglife, 1999)) within suitable habitat. The refugia were left in situ for over a fortnight prior to commencement of the survey visits to allow them to settle and to allow sufficient time for reptiles to locate them. On each subsequent check, 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 Site and looking in areas where reptiles could be present. All incidental sightings of reptiles made as part of other concurrent daytime ecological field surveys carried out within the Site were also recorded, with results included within this report.

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 visits to the Site to check refuges and carry out DOS 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).

2.2 POPULATION CLASS ASSESSMENT

The most reliable means of determining the actual size of a reptile population is to carry out Capture-Mark-Recapture (CMR) techniques. However, this is labour intensive and can have welfare implications and in most situations is considered unnecessary. Instead, it is possible to estimate the broad population size class using the maximum number of individuals (adults) recorded on any one survey visit.

In accordance with HGBI (1998), the reptile populations recorded on Site 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;
- County;
- Local.

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

Date	Survey Method	Weather	Start Time	End Time
09/05/2014	Deployment of reptile refugia	N/A		
25/05/2014	Refugia Check & DOS	Dry (showers earlier in day), sunny, light breeze (Beaufort 2), cloud cover 20%, warm (19°C).	17.00	18.30
09/06/2014	Refugia Check & DOS	Dry, overcast with bright spells, light breeze (Beaufort 2), cloud cover 85%-100%, warm (19°C).	14.00	15.30
25/06/2014	Refugia Check & DOS	Dry, sunny, light breeze (Beaufort 1-2), cloud cover 15%, warm (16-17°C).	17.00	18.30
15/07/2014	Refugia Check & DOS	Dry, bright sunny spells, light breeze (Beaufort 1), cloud cover 50%, warm (19°C).	11.00	12.30
25/08/2014	Refugia Check & DOS	Dry, overcast with bright spells, light breeze (Beaufort 2), cloud cover 95%, mild (16°C).	16.15	17.30
02/09/2014	Refugia Check & DOS	Dry, overcast with bright spells, light breeze (Beaufort 2), cloud cover 95%, warm (17.5-18°C).	17.00	18.15
23/09/2014	Refugia Check, DOS & collection of mats	Dry, sunny / bright, light breeze (Beaufort 2), cloud cover 75%, mild (16.5-17°C).	15.30	17.15

All surveys were carried out by Becky Prudden MCIEEM. Becky has over 10 years' experience as a consultant ecologist and is a skilled field ecologist with strong herpetofauna survey skills.

2.5 LIMITATIONS

No major limitations that are considered to significantly affect confidence in the findings were encountered whilst completing the surveys.

Three reptile refugia (Nos. 31, 32, and 33) which were deployed on a scrub-covered bank within grazed pasture were damaged by livestock between survey visits 1 and 2. Given the high likelihood of similar damage occurring to any replacements, together with the lack of suitable undisturbed habitat for reptiles (not accessible to livestock), no replacements were made in this location. A total of five reptile refugia were immediately replaced after being damaged during some minor scrub clearance works carried out in June within the paddock to the west of Alston farmhouse.

Weather conditions recorded on each visit were favourable for recording reptiles (refer to Table 2 above), with little or no wind, no rain and temperatures typically falling within the optimal range for basking reptiles (9-18°C). On several of the survey visits, temperatures were slightly higher than 18°C at times, however this was largely unavoidable given the

time of year (whilst still ensuring other weather / timing factors remained favourable) and is not considered to significantly affect confidence in the findings.

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 shown 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
1	25/05/2014	73	1 Common Toad (adult)	None
2	09/06/2014	57	1 Common Toad (adult)	1 Slow-worm
		58	1 Slow-worm (adult male)	
3	25/06/2014	34	1 Common Frog (adult)	None
4	15/07/2014	15	1 Common Toad (adult)	None
		34	1 Common Frog (adult)	
		71	1 Common Toad (adult)	
5	25/08/2014	N/A (no herptiles recorded)		None
6	02/09/2014	29	1 Common Toad (juvenile)	None
		34	1 Common Toad (juvenile)	
		38	1 Common Toad (juvenile)	
7	23/09/2014	N/A (no herptiles recorded)		None

The reptile survey confirmed the presence of Slow-worm within the small paddock to the west of Alston Farmhouse (adjacent to the garden boundary). No sightings were made in any of the other locations surveyed and no other reptile species were found during the survey.

No incidental reptile sightings (as part of other daytime ecological surveys completed within the relevant survey window) were made. Given the frequency and coverage of visits to the Site, this lack of sightings gives added weight to the previous assessment that the vast majority of the Site is unsuitable for reptiles and a likely absence can therefore be assumed.

With regards other herptiles, sightings of low numbers of adult and sub-adult Common Toad and Common Frog *Rana temporaria* were recorded using the artificial refugia (refer to Table 3 above for refugia numbers). Records of Common Toad were scattered across the survey area whilst Common Frog was recorded along the edge of Alston Wood.

3.2 POPULATION CLASS ASSESSMENT

A quantitative population assessment was conducted using the maximum count of adult individuals of reptiles recorded on any one survey visit (across all sampling areas using both refugia check and DOS counts), as per the methodology described in section 2.2 (HGBI, 1998).

Based on a broad estimate of there being c. 1.7ha of suitable reptile habitat within the Site (encompassing all habitats subject to further survey for reptiles) and, with comparison to the thresholds given in Table 1, the population class for Slow-worms present within the area close to Alston Farm is assessed as 'low'.

Furthermore, given that only a single adult Slow-worm was recorded on one occasion across the survey visits, this is considered to be a remnant / unstable population comprising very few individuals with no evidence of breeding identified during the survey.

4.0 VALUATION AND CONCLUSIONS

The Site provides limited areas of suitable habitat for reptiles (estimated to be c. 1.7ha) within and surrounding Alston Farm buildings and along scrub-fringed grassland on sloping ground in the northern part of the Site. The remainder of the Site was assessed as sub-optimal for reptiles given its intensive use and management for turf production, livestock grazing and / or hay, with hedgebanks considered too heavily shaded to support reptiles.

The reptile surveys confirmed the presence of a 'low' population of Slow-worm within the paddock to the west of Alston Farm, but concluded a likely absence of other reptile species or reptile populations elsewhere within the survey area. Given the fact that only a single adult Slow-worm was recorded across the survey visits, the population is considered unstable and potentially vulnerable to localised extinction (even in the absence of any impacts associated with the extension proposals).

With regards incidental records made of other notable species of herptiles, sightings of individual Common Toads were made on four separate occasions, confirming the presence of this species on Site (albeit in low numbers). As highlighted in Section 1.2.2, Common Toad is listed as a Species of Principal Importance (SPI) under Section 41 of the NERC Act 2006 which imposes a duty on public bodies (including local planning authorities) to have regard for the conservation of this species when carrying out their functions.

Overall, the vast majority of the Site is considered to be of negligible value to reptiles. Where the presence of a low population of Slow-worm was detected close to Alston Farm, this is considered to be of Local value.

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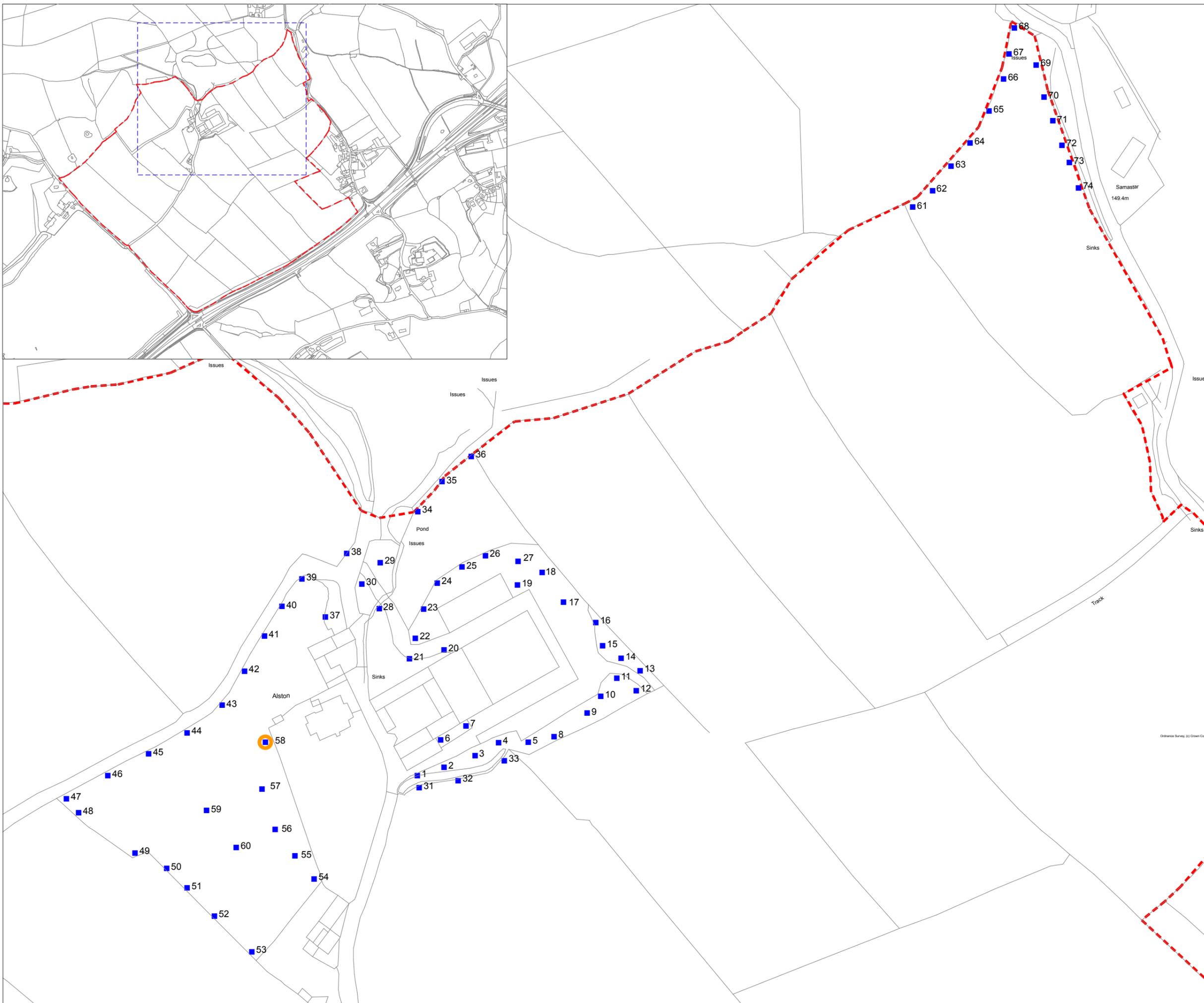
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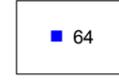
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-  Survey Area
-  64 Reptile Refuge Location
-  Slow-worm sighting



**Linhay Hill Quarry:
Extension Area**
Reptile Survey:
Refugia Sampling Locations &
Results

Figure 1



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