



Reptile Survey Report

in respect of

***Section 73 Application For 3No. Changes to the Limits of
Extraction within the Existing Permitted Planning Boundary of
Ballswood Quarry***

for

Cheshire and North Wales Sand and Gravel Ltd

Prepared By

Heaton's

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Heaton's

9 The Square, Keyworth, Nottingham NG12 5JT

tel: 0115 937 5552 email: consultants@heatonplanning.co.uk web: www.heatonplanning.co.uk

Heaton's is the trading name for Heaton Planning Ltd.

Registered office – 12 Bridgford Road, West Bridgford, Nottingham, NG2 6AB. Registered No. 4786259



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1.0 INTRODUCTION

- 1.1 Heaton's have been commissioned by Cheshire and North Wales Sand and Gravel Limited to undertake Reptile surveys at Ballswood Quarry, (hereafter referred to as the site).
- 1.2 These surveys have been undertaken to fulfil the protected species survey requirements identified in the Preliminary Ecological Appraisal (PEA) (reference report) completed in March 2020.

Survey Scope

- 1.3 The key objective of the reptile survey was to determine the presence or absence of reptiles within the site, of which account must be taken prior to and during the planned works in accordance with the Wildlife and Countryside Act 1981 (as amended).
- 1.4 The survey should begin to enable an assessment of the potential effects of the proposals on reptiles (if identified as present). This will help inform the design and scope of any mitigation measures that might be proposed.

Site location and description

- 1.5 Ballswood Quarry is located at Gegin Lane, Wrexham, LL12 0NU, and is one of three active sand and gravel quarries in the County Borough of Wrexham (the others being Borrass Quarry and Hafod Quarry). Ballswood Quarry is operated by Cheshire and North Wales Sand and Gravel Ltd.
- 1.6 The majority of the site is comprised of existing quarry, with areas of scattered scrub and tall ruderal vegetation located around existing soil bunds. The boundaries of the existing quarry are comprised of broad-leaved semi natural woodland and hedgerows. There are a number of waterbodies located within the existing quarry. The eastern section of the site is comprised of arable fields and heavily grazed improved grassland.

Proposed Development

- 1.7 The proposed development is to enable 3 proposed changes to the extraction boundary of Ballswood Quarry utilising existing quarry infrastructure and access. The proposed development will release currently sterilised mineral within the permitted planning boundary of the site. Access to the site for the



purpose of extending mineral extraction from the existing quarry to the west
would best be supplied through the existing quarry site.

2.0 LEGISLATION

2.1 All reptile species receive protection under the Wildlife & Countryside Act 1981 (as amended), making it illegal to;

- Intentionally kill or injure reptiles;
- Sell, offer for sale, possess or transport reptiles (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

2.2 In addition, due to their status as scarce species both smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) are European protected species, protected under the Conservation of Habitats and Species Regulations, 2017 This affords them additional protection, making it illegal to:

- Deliberately capture smooth snakes or sand lizards;
- Deliberately disturb smooth snakes or sand lizards, including in particular any disturbance which is likely to:
 - impair their ability to survive, reproduce or to rear or nurture their young;
 - impair their ability to hibernate or migrate; or
 - significantly affect their local distribution or abundance.
- Damage or destroy a breeding site or resting place of smooth snakes and sand lizards.
- Possess or control any live or dead specimen or anything derived from a smooth snake or sand lizard.

2.3 It should also be noted that reptiles are species of principal importance listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2.4 The implications of the above are that the proposed works may result in the death or injury of individual reptiles and therefore measures should be put in place in areas where they are known to be present (or likely to be present) to provide for their individual protection.

3.0 ASSESSMENT METHODOLOGY

Desktop Study

- 3.1 To support the extended Phase 1 habitat survey, background information on the site and its immediate surroundings was compiled to provide information on statutory and non-statutory designated sites within a 2km radius of the central point of the site. This was obtained from the COFNOD environmental information service interactive map.
- 3.2 In addition, the COFNOD North Wales environmental information service was commissioned to undertake a data search for all protected and notable species and all sites of conservation importance within a 2km radius of the central point of the site.
- 3.3 Reference was also made to Ordnance Survey maps and aerial photography, which were used to determine the presence of open water and ponds in the area and provide information on land use and habitat connectivity throughout the area. This is important as open water and pond habitats provide possible foraging grounds for species such as grass snake (*Natrix helvetica*) due to a potential presence of amphibians. Being able to determine connectivity between areas of suitable habitat will also help to establish whether any reptile populations found at the site are part of the same group of individuals, or are part of several isolated groups, and therefore aid in creating a suitable mitigation strategy if they are present.

Field Survey

Habitat Assessment

- 3.4 The ecological walkover survey was undertaken on the 18th May 2020 to assess the likelihood of protected or notable species to be found across varying habitats around the quarry. Areas of potential breeding, foraging or sheltering were noted during the PEA for future use when deploying reptile mats around the site. The reptile surveys were undertaken during June, July and August 2020, with seven checks in total across the three months.
- 3.5 Heatons follows the guidelines of the Survey Protocols for the British Herpetofauna (Sewell *et al.*, 2013). These guidelines were produced following research and five regional workshops that were held in 2011 – 2012 regarding the survey protocols of herpetofauna.

- 3.6 These and other widely accepted methods require the placement of artificial refugia on suitable areas of the site for reptiles. Chance sightings of native reptiles are rare and only by concentrating on suitable areas at certain times of day, in the right weather conditions, is it possible to adequately survey reptiles. It is for this reason that the standard method involving the use of refugia has been developed. The artificial refugia used were 0.5m x 0.5m or 0.5m x 1m sheets of bitumen roofing felt.
- 3.7 These refugia are chosen due to their ability to exaggerate the conditions that reptiles seek to survive. As ectotherms, reptiles are unable to control their own body temperature and rely on an external heat source to raise or lower their temperature enough to be able to function. Bitumen roofing felt warms quickly in direct sunlight compared to ground temperature and so provides an area where reptiles can increase their body temperature without direct exposure to sunlight and potential predators. This rapid warming also attracts prey species such as crickets (*Orthoptera spp.*) and ants (*Formicidae spp.*) which are attractive to certain reptile species like common lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*). This in turn increases the likelihood of determining the presence or absence of reptiles on a site.
- 3.8 Reptile mats were placed within the site conforming to the minimum recommended density of between 5 and 10 per hectare of suitable habitat (locations of reptile mats are show in Appendix A). Refugia were left to settle for a period of 12 days before being first checked in order to ensure that reptiles have had time to become habituated to them.
- 3.9 The refugia were then checked on 7 separate occasions by Harry Huddart. Both artificial and natural refugia were checked for reptiles along with areas of suitable reptile habitat occurring within the site. This involved the surveyor walking across the site during every survey visit keeping a close watch for any reptiles within the areas of suitable habitat in particular.
- 3.10 The surveys were spaced out throughout the season between June and August and were conducted under suitable weather conditions. Details of the weather conditions on each survey are included in the results section.

4.0 RESULTS

Desk study

Statutory Designated Sites

- 4.1 There are three Statutory Designated Sites located within 2km of the site boundary. The closest of these is the Chwarel Singret Special Site of Scientific Interest (SSSI). This is located approximately immediately adjacent to the quarry plant site and is designated for geological interest. There were no records for reptile species returned for this SSSI.
- 4.2 The Marford Quarry SSSI is located 0.6km to the south-east of the site boundary. This site contains records for three species of reptile. These include grass snake, adder (*Vipera berus*) and slow-worm.
- 4.3 The Alyn waters Local Nature Reserve (LNR) is located approximately 1.9km to the south-west of the site boundary. The site is designated for its rich meadow habitat, variety of grassland, woodland. Species recorded at Alyn Waters include adder and grass snake.

Non-Statutory designated Sites

- 4.4 The COFNOD search returned records for seven non-statutory designated sites within 2km of the site boundary. The closest of these is the Ballswood Quarry and Cockpit Wood Local Wildlife Site (LWS) which covers the existing quarry and the wider extending broad-leaved semi natural woodlands. There were no records for reptiles returned for this (LWS).
- 4.5 The Marford Quarry SSSI site is also designated as a North Wales Wildlife Trust Reserve. This site returned records for grass snake, adder and slow-worm.
- 4.6 Burton Tower Lake (LWS) is located 1km north of the site boundary. This site is a fishing lake which has ornithological importance. The lake contains marginal vegetation and is surrounded by broad-leaved semi natural woodland. The site covers approximately 3.1 hectares. There were no records for reptiles returned for this (LWS).
- 4.7 The Nant-y-Gaer and Llay valley (LWS) is located approximately 1.3km to the south-west of the site boundary. The site covers approximately 12.1 hectares and is designated for its broad-leaved semi natural woodland. There were no records for reptiles returned for this (LWS).

- 4.8 The Bryn Alyn and Wormswood (LWS) is located approximately 1.4km to the south-west of the site boundary. This site covers approximately 49.2 hectares and is designated for broad-leaved semi natural woodlands and semi-improved grasslands located along a meander of the River Alyn. There were no records for reptiles returned for this (LWS).
- 4.9 The Hoseley Wood (LWS) is located approximately 1.6km to the south-east of the site boundary. This area covers approximately 16.7 hectares and the site is designated for habitats including broad-leaved semi natural woodlands, marshy grassland, semi-improved neutral grassland and standing water. There were no records for reptiles returned for this (LWS).
- 4.10 Rackery Wood (LWS) is located approximately 1.7km to the north of the site boundary. This site covers approximately 1.8 hectares and is designated for areas of broad-leaved semi natural woodland. There were no records for reptiles returned for this (LWS).

Species Records

- 4.11 The COFNOD search returned records of four reptile species within 2km of the site boundary. These include common lizard, slow-worm, adder and grass snake. For slow-worm, COFNOD returned 49 records within 2km of the site boundary. These records were dated between 2005 and 2014. The majority of these records were located approximately 0.8km to the south-east of the site boundary.
- 4.12 The COFNOD search returned six records for grass snake within 2km of the site boundary. These were dated between 1907 and 2015. The closest of these records was located approximately 0.8km to the south-east of the site boundary. This individual record was dated from 2015.
- 4.13 The COFNOD search returned three records for adder within 2km of the site boundary. These records were dated from 1907, 1970 and 2009. The closest of these records was located 1.4km to the south-west of the site boundary. This record was dated from 2009.
- 4.14 One record was returned for common lizard within 2k of the site boundary. This record was located approximately 0.9km to the south-east if the site boundary and was dated from 2011.
- 4.15 The NBN search also returned records for slow-worm, grass snake, adder and common lizard within 2km of the site boundary. These records were all returned

from the same location located approximately 1.2km to the south of the site boundary.

Habitat Assessment

- 4.16 The semi-improved grasslands within the site are considered to provide suitable foraging habitat for reptiles. In addition, the area of semi improved grassland along the northern boundary is located on a south facing bank. This area is considered to provide optimal habitat for basking reptiles.
- 4.17 In addition, there is also an area of log piles located at Grid Reference SJ350563. These are located in the corner of the adjacent arable fields. These log piles provide suitable basking and shelter for a variety of reptile species.

Survey Results

- 4.18 Table 1 presents the dates and prevailing weather conditions of the surveys undertaken in 2020. The numbers of reptiles found are presented for each survey visit in Table 2. Additional species recorded in 2020 are also shown within Table 2.

Table 1: Survey visit times and weather conditions.

Date	General Weather Conditions (Beaufort Scale 1-1-14)	Air Temperature (°C)
15/6/2020 AM	Sunny and Dry and warm, 70% cloud cover with very low wind (1).	18°C
21/7/2020 AM	High cloud cover and warm, Cloud cover 90% with low wind (1).	17.5°C
22/7/2020 AM	Dry with 95% cloud cover with low breeze (1)	14°C
28/7/2020 AM	Bright with 40% cloud cover with low breeze (1).	14°C
30/7/2020 AM	Sunny with 80% cloud cover, with no breeze (1).	14.5°C
3/8/2020 AM	Dry, 75% cloud cover with a low breeze (1)	18°C
4/8/2020 AM	Very light rain, 80% cloud cover with a light breeze (1)	12°C

Table 2: Reptiles found during survey visits.

Reptile Survey Number:	Reptiles recorded				Other animals recorded
	Common lizard	Slow-worm	Grass snake	Other reptiles	
1	0	0	0	0	0
2	0	0	0	0	1 adult toad
3	0	0	0	0	1 adult toad
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0

- 4.19 The results show that no reptiles were recorded throughout the survey period despite the favourable weather conditions throughout the surveys. One other species was noted during the survey, this was the common toad (*Bufo bufo*) a more common species, yet this has no effect on the proposals. Common toads are UK Biodiversity Action Plan (UK BAP) listed and are protected by the Wildlife and Countryside Act (1981) (as amended).

5.0 CONCLUSION

- 5.1 No reptiles were recorded during the seven surveys performed for June to August 2020. The surveys were undertaken during optimal weather conditions and therefore, it is considered that there are no reptiles in the areas surveyed.
- 5.2 If any reptiles are to be discovered during the works, they must be stopped immediately and a qualified ecologist must be informed so the issue can be dealt with accordingly.
- 5.3 A peak count of one common toad was recorded onsite during the reptile surveys. A number of grasslands and waterbodies are to be created within the site as part of the proposed restoration strategy. This will therefore increase the habitat diversity for this species within the site and the local surrounding area.

6.0 REFERENCES

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Appendix A

Reptile Mat Locations



LEGEND

-  Species Found
-  Reptile Mat Transects
-  Site Boundary
- OpenStreetMap

Transect A - 20x Mats in a mosaic in suitable locations around scattered scrub on bund of quarry.

Transect B - 10x Mats along field/quarry margin.

Transect C - 8x Mats around dead tree trunk, surrounded by tall ruderal vegetation.



Heatons
Planning Environment Design

PROJECT
Ballswood Quarry

DRAWING TITLE
Reptile Mat Locations

DATE REFERENCE
Aug 2020 KEDL-003-M (ED.004)

SCALE
See Map
STATUS
FINAL

Heatons 9 The Square, Keyworth, Nottinghamshire NG12 5JT
t. 0115 937 5552 www.heatonplanning.co.uk
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