

VAYNOR QUARRY

Appendix 7/4 to EclA – Great Crested Newt Survey Report

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CONTENTS

1.0 INTRODUCTION	1
1.1 Background	1
1.2 Legislative Context	1
1.3 Objectives of the Study	2
2.0 METHODOLOGY	3
2.1 Desk-based Study.....	3
2.2 Field Survey	3
2.2.1 Habitat Suitability Index Survey	3
2.2.2 Aquatic Habitat Survey	3
2.3 Survey Personnel	4
2.4 Limitations	4
3.0 RESULTS	5
3.1 Desk-based Study.....	5
3.2 Habitat Suitability Index (HSI) Assessments	5
3.3 Great Crested Newt Survey.....	7
4.0 DISCUSSION	8
5.0 SUMMARY AND CONCLUSIONS.....	9

DOCUMENT REFERENCES

TABLES

Table 3-1 Habitat Suitability Index (HSI) Assessment Results	5
Table 3-2 Summary of Survey Results 2018	7

DRAWINGS

Drawing EC4: Pond Location Plan

1.0 Introduction

This report has been prepared by SLR Consulting Limited (SLR) on behalf of Hanson UK (Hanson) and summarises the findings of a great crested newt (*Triturus cristatus*) survey undertaken at Vaynor Quarry in Merthyr Tydfil, hereafter referred to as 'the site'.

The site is located immediately north of Trefechan and is centred on the National Grid Reference (NGR) SO 035 103 due to its extent it occurs within both the Merthyr Tydfil County Borough Council (MTCBC) and Brecon Beacons National Park Authority (BBNPA) administrative areas.

1.1 Background

In March 2017, SLR completed an initial desk-based report¹ to inform Baseline Hydrological/Hydrogeological Surveys at the site as required to inform a Hydrological Impact Assessment (HIA).

Following this in March 2018, an initial site habitat survey was undertaken in order to review the baseline ecological conditions at the site and help inform the requirement and scope of any follow-on surveys needed to complete an Ecological Impact Assessment (EcIA). This identified habitats with the potential to support great crested newt and so a survey specifically for great crested newt was undertaken as set out in this report.

1.2 Legislative Context

The great crested newt is fully protected through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2018 (The Habitats Regulations). In brief, this legislation makes it offence to:

- deliberately kill, injure or take a great crested newt;
- deliberately disturb a great crested newt in such a way as to be likely to impair their ability to survive, breed or reproduce, or rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of that species;
- deliberately take or destroy the eggs of great crested newt;
- damage or destroy the breeding or resting place of a great crested newt;
- intentionally or recklessly obstruct access to a place that great crested newt use for shelter or protection; and
- intentionally or recklessly disturb a great crested newt whilst it is occupying a place which it uses for shelter or protection.

The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity duty, which replaces and enhances the biodiversity duties set out in the NERC Act 2006 and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems.

Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales, great crested newt is one such species.

¹ SLR Reference 406.00027.00434

1.3 Objectives of the Study

The objectives were to establish the presence, or likely absence, of great crested newt in the context of the site to enable further assessment of any potential impacts that may arise in relation to the resumed operation of the quarry.

2.0 Methodology

2.1 Desk-based Study

As part of the EcIA, a background search for records of protected and notable species (including amphibians) was undertaken.

The South East Wales Biodiversity Records Centre (SEWBReC) was contacted for information on pre-existing biological records within 2km.

2.2 Field Survey

A summary of the methods employed is given below, methods followed published guidelines².

2.2.1 Habitat Suitability Index Survey

Individual Habitat Suitability Index (HSI) values were calculated for each pond identified during the initial habitat survey. The following criteria are used to calculate a HSI score for a pond/waterbody:

- geographic location;
- pond area;
- water level in summer (how often the pond is likely to dry out);
- water quality;
- shoreline shade;
- number of waterfowl;
- the presence of fish;
- the number of ponds within 1km;
- terrestrial habitat quality; and
- aquatic macrophyte cover.

2.2.2 Aquatic Habitat Survey

Following sunset, water bodies within the survey area were systematically searched using a 1, 000 000 candle power torch, to detect the presence of amphibians. Amphibians, notably newt species are easier to detect under these conditions.

Accessible banks of each water body were scanned with the torch beam and any amphibians encountered were counted. Survey of each section of the bank was considered complete when all visible water area had been scanned with the torch beam and no further amphibians were encountered.

Suitable egg laying vegetation in all ponds was inspected for evidence of great crested newt eggs during torch surveys. Once eggs were discovered in a particular water body, no further egg searches were undertaken although incidental observations of breeding activity were still made.

Other evidence of breeding activity, e.g. courtship and egg-laying were also recorded where observed.

² English Nature (2001) Great Crested Newt Mitigation Guidelines. JNCC (1998) *Herpetofauna Workers' Manual*.

2.3 Survey Personnel

The surveys were led by experienced and appropriately licenced ecologists from SLR Consulting Ltd including Mr Chris Mitchell (Natural Resources Wales licence number 75861:OTH:SA:2017) and Mr Rob Williams (77894:OTH:SA:2017) with support from other SLR ecologists.

2.4 Limitations

Pond 1 was not subject to torching, netting and egg searching due to its distance of approximately 350m from the site boundary, small extent and HSI score indicating below average suitability.

Ponds 2, 3, 4, 5, 6 and 7 were unsuitable for bottle trapping due to being ephemeral and either holding very little water or having solid rock substrates which prevented the use of bottle traps. However, due to the small size of the waterbodies and the lack of macrophyte surface cover, it was considered that the methods of torching, netting and egg searches were sufficient in identifying any amphibians present.

Approximately 50% of Pond 5 could not be surveyed due to the fact the waterbody occurs alongside a vertical quarry face of 10-15m in height with unprotected edges. The survey results obtained are therefore likely an underestimate of actual numbers of great crested newt present.

The survey comprised of four visits, whereas the GCNMG advise six visits are undertaken to ascertain population size. This is not considered a limitation as the initial visit recorded a peak count of 180 great crested newt and numbers declined thereafter. As the site evidently supports the highest population size class, undertaking further survey visits would not influence the population size class assessment and only increase the level of disturbance to the population during the breeding season.

However, despite the above limitations, the presence of great crested newt has been confirmed and an appropriate scheme of mitigation and enhancement developed to account for any increase or decrease in population size at the point of the site reopening.

3.0 Results

3.1 Desk-based Study

Records for great crested newt (*Triturus cristatus*) (GCN), palmate newt (*Lissotriton helveticus*), common frog (*Rana temporaria*) and common toad (*Bufo bufo*) were returned by the desk study within 2km of the site.

3.2 Habitat Suitability Index (HSI) Assessments

The HSI assessments of the seven ponds present within the site as shown on Drawing EC4 indicates a varying suitability of habitat for GCN, the habitat description and results are set out in Table 3-1 below.

Table 3-1
Habitat Suitability Index (HSI) Assessment Results

Pond	Description	HSI Score	Suitability for GCN
1 	Grassland sloping into water with soft rush and moss. Depth approx. 35cm. Pond size c. 20m x 3m. Vegetation cover= 60-100% Turbidity= 2	0.51	Below average
2 	A scrape with depth of approx. 20cm. Pond size c. 13m x 4m. Vegetation cover= 80% Turbidity= 2	0.48	Poor
3 	A network of 4 pools of water, considered ephemeral. Pond size c. 30m x 20m. Vegetation cover= 20% Turbidity= 2	0.59	Below average
4	Pooling of water formed on line of running water cascading down from secondary bench. 2 x small	0.51	Below average

Pond	Description	HSI Score	Suitability for GCN
	pools separated by a pile of boulders but considered as one pool. Depth approx. 30cm. Pond size c. 20m x 5m. Vegetation cover= 20% Turbidity= 2		
5 	Large body of water with four small shallow pools of water located down the eastern side of the pond and another shallow pool to the north. Ground water flows from the secondary bench into this pool. Goat willow and buddleja line the perimeter and the western edge is shaded by the quarry face. Pond size c. 200m x 30m. Vegetation cover= 35% Turbidity= 2	0.79	Good
6 	Pools along the course of the quarry floor, interlinking by flow of water from the western quarry face. Pond size c. 20m x 10m. Vegetation cover= 0% Turbidity=2	0.55	Below average
7 	Ponding fed by water flow from up spill at T24, and drains away under the road through a manmade draining grate. Ephemeral. Pond size c. 20m x 10m. Vegetation cover= 10% Turbidity= 2	0.59	Below average

3.3 Great Crested Newt Survey

The 2018 surveys recorded the presence of GCN in two of the seven waterbodies as summarised in Table 3-1 below and also shown on Drawing EC4.

Table 3-2
Summary of Survey Results 2018

Pond	Number of Surveys	GCN Present/Absent	Peak Count	GCN Population Size Class
1	0	Absent	n/a	n/a
2	4	Absent	n/a	n/a
3	4	Absent	n/a	n/a
4	4	Absent	n/a	n/a
5	4	Present	180	Large
6	4	Present	4	Small
7	4	Absent	n/a	n/a

In 2018, a large population of GCN with signs of breeding was recorded in Pond 5 within the eastern void, and a small population of GCN recorded in Pond 6 within the western void.

Other species of amphibian were identified within the ponds present, these included common frog (*Rana temporaria*) in all seven ponds within the site. Common toad (*Bufo bufo*) was recorded in Ponds 4, 5, 6 and 7, and palmate newt (*Lissotriton helveticus*) was identified in Ponds 4, 5 and 6.

4.0 Discussion

A large population of great crested newts has been recorded at the site, comprising a peak count of 180 great crested newts in Pond 5 and four great crested newts in Pond 6, potentially making an overall maximum peak count of 184 great crested newts. The presence of common frog, common toad and palmate newt was also recorded during the surveys.

Given full survey of Pond 5 was not possible due to restricted safe access and certain elements of the survey were constrained as a result of the nature of the waterbodies present i.e. bottle traps could not be used, it is considered overall that the actual numbers of great crested newt within Pond 5 would have been greater. The remaining ponds were all very shallow and clear with unrestricted access and so it is considered the other pond survey results are reflective of the distribution of the population being heavily focussed around Pond 5. This would also correspond to the location of accessible suitable terrestrial habitat being heavily focussed towards the south-eastern and eastern fringes of the site.

The assemblage present could meet the criteria for selecting Wildlife Sites in South Wales³ on the basis of four amphibian species being present and a large population of great crested newt.

Based on knowledge of other great crested populations in South Wales, this is considered likely to represent one of the larger known populations.

The value of the site, in terms of amphibians, is therefore assessed as being at the Regional (South Wales) level of importance.

³ <http://www.sewbrec.org.uk/content/attachments/SouthWalesWildlifeSitesCompleteDoc.pdf>

5.0 Summary and Conclusions

The amphibian surveys conducted in 2018 confirmed the presence of great crested newt, palmate newt and common frog.

An assessment of the population size classes based on the survey results would indicate that the site supports a large population of great crested newt which includes the use of both quarry voids although heavily focussed towards Pond 5 and the eastern void.

The potential impacts and mitigation requirements are considered in more detail in the main EclA and Appendix 7.

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