



**Tata Steel UK Limited**

# **Electric Arc Furnace**

**Great Crested Newt Survey Report**

**2487033 P&C EAF (Rev00)**

**MAY 2024**

## RSK GENERAL NOTES

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**Project No.:** 2487033


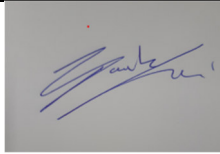

**Title:** Electric Arc Furnace – Great Crested Newt Survey Report

**Client:** Tata Steel UK Limited

**Date:** May 2024

**Office:** Cardiff

**Status:** Rev 00

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## EXECUTIVE SUMMARY

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The report presents the findings of great crested newt surveys carried out on land at Tata Steelworks in Port Talbot, South Wales. A Habitat Suitability Index assessment survey was carried out on 17<sup>th</sup> March 2022 with environmental DNA surveys undertaken on 27<sup>th</sup> and 28<sup>th</sup> April 2022, respectively. Presence/ absence surveys and subsequent population surveys were carried out between mid-April and mid-June 2022. This report has been produced to support the Electric Arc Furnace project. The surveys were based on the 2021/2022 survey area (the boundary of the previous iteration of the project), no additional surveys were undertaken with the update to the red line boundary as there were no additional waterbodies impacted.

The purpose of this survey was to establish the presence or absence of great crested newt in connection with the proposed development. The desk study returned records of great crested newt within 2 km of the site, the nearest record approximately 2 km south of the site.

A medium population of great crested newt were identified within one waterbody (waterbody 2) over 250 m from the proposed development. GCN were not identified within any aquatic habitat within the proposed development site.

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# 1.0 INTRODUCTION

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## 1.1 Purpose of This Report

- 1.1.1 The report presents the findings of great crested newt (GCN; *Triturus cristatus*) surveys carried out on land at Tata Steelworks in Port Talbot, South Wales (central Grid Ref SS 77524 86021). The area termed 'the site' throughout this report is delineated on Figure 1 by the red-line boundary.
- 1.1.2 Surveys were commissioned to inform the planning process and Environmental Statement ecology chapter in respect to GCN using the site. The surveys were undertaken to determine the presence of GCN at the site, identify if GCN could be affected by the proposals and, if necessary, inform a mitigation strategy to reduce impacts to non-significant levels.

## 1.2 Background

- 1.2.1 The GCN surveys were carried out between March and June 2022 within the 2021/2022 survey area (shown in purple in Figure 1). Subsequently, adjustments were made to the proposed development, however, no additional suitable aquatic or terrestrial habitat with connectivity to the wider landscape was identified for further survey (shown in red in Figure 1).

## 1.3 Ecological Context

- 1.3.1 A preliminary ecological appraisal (PEA), including a background data search (BDS) was completed by RSK (RSK, October 2021). Records of GCN were identified during the BDS, within 2 km of the red line boundary. Habitat within the red line boundary was identified as suitable for GCN and common species of amphibian during the PEA.
- 1.3.2 The 162.7 ha site is located to the south-east of the town of Port Talbot. The site is industrial and dominated by buildings and bare ground/ developed land. Open mosaic habitat is the most dominant habitat type comprising a mixture of scrub, grassland and ephemeral vegetation. There are a number of channels throughout the site and one large lake associated with the steelworks, located at the northern extent of the site.
- 1.3.3 The site is immediately bordered to the north, east and west by Tata Steelworks with coastal floodplain grassland, reedbed, an access road and Margam Moors Site of Special Scientific Interest (SSSI) adjacent to the south of the site. The surrounding landscape is a mixture of woodland, hedgerows, waterbodies (reservoir), coastal floodplain grassland and residential properties within Margam. Swansea Bay (Bristol Channel) is located approximately 880 m west of the site.

## 1.4 Development Proposals

- 1.4.1 The Proposed Development will require the demolition of existing buildings and structures, and the construction of a new EAF steel production facility. The Proposed



Development also includes a scrap metal handling facility and associated scrap yards, slag processing facility, chemical and material storage structures, buildings, handling systems, electrical control rooms and power infrastructure, laboratories, offices and ancillary facilities, together with new and amended transport infrastructure, landscaping and associated development.

## 2.0 METHODOLOGY

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- 2.1.1 Thirteen waterbodies were identified through the PEA and aerial imagery for further GCN surveys. Twelve of them were within the 2021/2022 survey area, of these seven are within the updated red-line boundary (see Figure 1). One waterbody (waterbody 2) is over 250 m from the red line boundary. Waterbody 2 was originally over 500 m from the 2021/2022 survey area and was included in the assessments as a potential translocation waterbody, if a population of GCN was identified within the site.

### 2.2 Habitat suitability index

- 2.2.1 Habitat Suitability Index assessments (HSI) were completed on 17 March 2022 to assess each waterbody for their suitability to support GCN.
- 2.2.2 The HSI uses ten factors (suitability indices (SI) 1 to 10), which are thought to affect GCN, as follows:
- geographic location (SI 1);
  - surface area (SI 2);
  - hydrology (drying) (SI 3);
  - water quality (SI 4);
  - shade (SI 5);
  - presence of water fowl (SI 6);
  - presence of fish (SI 7);
  - number of adjacent water features (SI 8);
  - terrestrial habitat (SI 9); and
  - macrophyte cover (SI 10).
- 2.2.3 Each factor is scored and the scores are converted to SI scores on a scale from 0.01 to 1 from graphs given in Oldham *et al.* (2000).
- 2.2.4 Further research by Brady (unpublished) has developed a system for using HSI scores to define waterbody suitability for GCN according to the following categories:
- HSI <0.5 = poor
  - HSI 0.5 – 0.59 = below average
  - HSI 0.6 – 0.69 = average
  - HSI 0.7 – 0.79 = good
  - HSI > 0.8 = excellent
- 2.2.5 There is a positive correlation between HSI scores and presence and abundance of GCN in waterbodies. Generally, waterbodies with high HSI scores are likely to support larger populations. However, the relationship is not sufficiently precise to conclude that a waterbody with a high HSI will definitely have a large newt population, or that a

waterbody with a low HSI score will only have a small newt population or no newts at all.

- 2.2.6 The drainage ditch network across the site was split into four distinct geographical locations based on their characteristics. These four areas were then treated as individual waterbodies for the sake of the HSI assessment.

## 2.3 Environmental DNA analysis

- 2.3.1 The presence/ likely absence of GCN in all of the waterbodies present within the site was determined through the use of Environmental DNA analysis (eDNA).
- 2.3.2 In accordance with good practice guidelines (Biggs, *et al.* 2014), 20 water samples were taken from the margins of the waterbodies included in the survey (where accessible) by an appropriately experienced and licensed surveyor using the correct methodology and equipment.
- 2.3.3 The samples were taken during the optimum survey period of 15th April - 30th June on 27<sup>th</sup> and 28<sup>th</sup> April 2022, with a repeat visit to one waterbody after an inconclusive result on 7<sup>th</sup> June 2022. The samples were taken by Kailey O'Brien (NRW GCN licence number - S091652/1).
- 2.3.4 The samples were taken from evenly spaced locations around the waterbodies and all areas of the waterbodies were surveyed (where accessible) in order to provide a complete overview of the diversification of the waterbody in the analysis.
- 2.3.5 The weather conditions and sedimentation levels were considered to be suitable for sampling.

## 2.4 GCN population size class

- 2.4.1 In order to determine the estimated population size class assessment of GCN at the site, a series of six survey visits (night and morning) were conducted according to current methodologies listed in the GCN mitigation guidelines (Natural England, 2001).
- 2.4.2 Survey visits were conducted in suitable weather conditions (see Table 4 in Appendix A) between mid-April and mid-June by NRW GCN licenced surveyors: Alex Ellis (GCN NRW licence number – S092617/1), Kailey O'Brien and Anna Burnham (GCN NRW licence number – S091104/1). A combination of the following survey methods were employed during each visit:
- Torch survey: involves walking the perimeter of water body shortly after dusk searching marginal areas for adult GCN with a powerful torch (e.g. Clulite 1 million candlepower torch).
  - Egg search: involves an examination of both living and dead submerged vegetation (especially folded leaves), fallen twigs or on other debris (plastic bags) for newt eggs.
  - Bottle trapping: involves setting traps made from empty plastic bottles around the margins of waterbodies in the evening and checking them early (before 10 am) the following day.



- 2.4.3 In order to carry out a population size class assessment, the highest count of adult newts obtained in each waterbody by any one method is summed for all waterbodies on one night. The peak total site count is then the highest of these figures. The figure which is obtained then determines whether the population of GCN at the site is small (for maximum counts up to 10), medium (for maximum counts between 11 and 100) or large (for maximum counts over 100).

## 3.0 RESULTS

### 3.1 Habitat suitability index

3.1.1 The results of the HSI assessments are given in Table 1 below.

**Table 1: HSI assessment results and suitability to support GCN**

Waterbody Number	Description	HSI Score	Suitability
Waterbody 1	Large man-made pond filled with reed and surrounded by a dense layer of bramble. Pond contained fish when it was first created. Water fowl present.	0.65	Average
Waterbody 2	Man-made pond on the edge of a sand dune system surrounded by creeping willow and rough grassland. A few mallard present.	0.66	Average
Waterbody 3	Large lake formed along the course of the main drainage ditch through the site. Moderate sized island in the centre, supporting trees and scrub. Lake surrounded by scrub with fairly steep banks. Lots of water fowl present.	0.33	Poor
Waterbody 4	Large area of wet woodland which floods frequently.	0.49	Poor
Waterbody 5	Section of main drainage ditch within the main steel works site. Bounded by the main road on one side and the slab storage yard on the other. Thin strips of ruderal / grassland / scrub either side. Lined with metal piling. Some water fowl present.	0.59	Below Average
Waterbody 6	Ditch through the eastern area of the steel works. Very overgrown with reed and plants from the surrounding rough grassland. Lots of run-off from the coal stores.	0.42	Poor
Waterbody 7	Large pond formed between two culverted sections of ditch. Very steep sides and water level is over 4m below ground level. Surrounded by rough grassland and scattered scrub.	0.57	Below Average
Waterbody 8	Large reed bed on edge of woodland. Dries out frequently.	0.42	Poor
Waterbody 9	Depressions in the ground within area of wet woodland filled with shallow water that will likely dry out in warmer months (not a pond).	0.41	Poor
Waterbody 10	Shallow ditch within woodland, will likely dry out in warmer months.	0.45	Poor
Waterbody 11	Reedbed at edge of car park and woodland. Very polluted.	0.41	Poor
Waterbodies 12a/12b	Extensive ditch network throughout southern fields (separated into two for purposes of further survey – 12a and 12b). Very overgrown, barely any open water, choked with reed and scrub.	0.55	Below Average

## 3.2 Environmental DNA analysis

- 3.2.1 All twelve waterbodies were re-visited in order to undertake eDNA surveys.
- 3.2.2 Three waterbodies were subsequently not surveyed (Waterbodies 6, 8 and 10) as they either were found to have a much faster flow than previously anticipated or they were completely dry, making them unsuitable to support a GCN population.
- 3.2.3 The details of the eDNA survey results are shown in Table 2 below.

**Table 2: eDNA Survey Results**

Waterbody Number	eDNA Result	2nd eDNA result
Waterbody 1	Negative	N/A
Waterbody 2	N/A – presence confirmed so not required	N/A – presence confirmed so not required
Waterbody 3	Negative	N/A
Waterbody 4	Negative	N/A
Waterbody 5	Negative	N/A
Waterbody 6	N/A – Fast flow so not required	N/A
Waterbody 7	Negative	N/A
Waterbody 8	N/A - Dry	N/A
Waterbody 9	Negative	N/A
Waterbody 10	N/A – Fast flow and very shallow so not required	N/A
Waterbody 11	Negative	N/A
Waterbody 12a	Inconclusive Result	Negative
Waterbody 12b	Negative	N/A

## 3.3 GCN population size class

- 3.3.1 Those waterbodies found to have HSI scores of 'Below Average' or above were subject to population estimate survey techniques including torching, egg searches and bottle trapping.
- 3.3.2 The results of these survey techniques are shown in Table 3 below.

**Table 3: Population Estimate Survey Results**

Waterbody Number	Methods	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Waterbody 1	Torching	No records	No records	No records	No records	N/A	N/A
Waterbody 2	Egg search	GCN eggs recorded	N/A	N/A	N/A	N/A	N/A
	Torching	4 male GCN 2 female GCN	1 male GCN 4 female GCN	3 female GCN 1 male smooth	2 male GCN	No records	No records

Waterbody Number	Methods	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
	Bottle trapping	8 female GCN 1 male GCN 1 male smooth newt	10 female GCN 4 male GCN 1 male smooth newt	3 male GCN 5 female GCN	1 female GCN 3 male GCN	5 female GCN 8 male GCN 1 male smooth newt	3 female GCN 2 male GCN 1 juvenile smooth newt
Waterbody 5	Torching	No records	No records	No records	No records	N/A	N/A
Waterbody 12a	Torching	No records	No records	No records	1 female smooth newt	N/A	N/A
Waterbody 12b	Torching	No records	No records	No records	No records	N/A	N/A

## 4.0 EVALUATION AND CONCLUSIONS

- 4.1.1 Based on the survey finding and population estimates, the red line boundary does not support a population of GCN.
- 4.1.2 There is one waterbody outside of the red line boundary (over 250 m from the boundary and over 500 m from suitable habitat within the proposed development), with a peak count of 14 GCN which is classed as medium population estimate (English Nature, 2001).
- 4.1.3 GCN present within waterbody 2 are unlikely to be present within the red line boundary as the habitat directly surrounding the waterbody and within the surrounding habitat (Margam Moors SSSI) are of good quality suitable for foraging and hibernating GCN. In addition to this, there are waterbodies within the SSSI that waterbody 2 are closer to, than the waterbodies within the red line boundary. Therefore, it is likely GCN will be moving between waterbody 2 and the SSSI waterbodies than commuting to waterbodies further afield (within the red line boundary).
- 4.1.4 Under current proposals, no areas of suitable habitat associated with this population are due to be removed.

## 5.0 REFERENCES

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Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000), Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4): 143-155.

RSK Biocensus (October 2021), *Project Cronus: Port Talbot – PEA REV00*. RSK

## 6.0 FIGURES

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**Figure 1** – Waterbody locations and survey results



275400 275600 275800 276000 276200 276400 276600 276800 277000 277200 277400 277600 277800 278000 278200 278400 278600 278800 279000 279200

187400  
187200  
187000  
186800  
186600  
186400  
186200  
186000  
185800  
185600  
185400  
185200  
185000  
184800  
184600  
184400



**Legend:**

Site boundary

2021/2022 survey area

Waterbody locations

eDNA Result

Positive

Negative

00	16/08/2024	2487033	TG	EC	KOB
Rev	Date	Description	Drm	Chk	App

**P&C EAF**

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EXPERTS IN ECOLOGY

TITLE: Figure 1:  
Waterbody locations

0 150 300 450

Metres

SCALE: 1:12,000 @ A3

REV 00



## APPENDIX A – SURVEYOR AND WEATHER INFORMATION

**Table 4: Weather data for population size class surveys**

Visit number	Time	Date	Weather	Temperature/ °C	Surveyor
1	PM	13.04.2022	Dry, foggy	9	<b>Anna Burnham</b> and Libby Brooks
	AM	14.04.2022	Dry	9	
2	PM	05.05.2022	Slight breeze, dry	12	<b>Kailey O'Brien</b> and Libby Brooks
	AM	06.05.2022	Slight breeze, dry	11	
3	PM	11.05.2022	Slight breeze, dry	14	<b>Alex Ellis</b> and Libby Brooks
	AM	12.05.2022	Dry	10	
4	PM	18.05.2022	Dry	12	<b>Kailey O'Brien</b> and Libby Brooks
	AM	19.05.2022	Dry	11	
5	PM	06.06.2022	Slight breeze, dry	14	<b>Kailey O'Brien</b> and Felix Tuff
	AM	07.06.2022	Dry	13	
6	PM	14.06.2022	Dry	15	<b>Alex Ellis</b> and <b>Kailey O'Brien</b>
	AM	15.06.2022	Dry	12	



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