Appendix 5.3

Great Crested Newt eDNA

Summary Report

C.GEN Killingholme Limited

NORTH KILLINGHOLME POWER PROJECT

Great Crested Newt eDNA Summary Report

GCN
MAY 2020

PUBLIC

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NORTH KILLINGHOLME POWER PROJECT

Great Crested Newt eDNA Summary Report

PUBLIC

PROJECT NO. 70055743

OUR REF. NO. GCN

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TABLES

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1. WSP UK Limited (hereafter referred to as 'WSP') was commissioned by C.GEN Killingholme Limited ('C.GEN') to update the ecological baseline data in relation to a proposed amendment to the Development Consent Order ('DCO') granted for the North Killingholme Power Project in 2014. The project proposals include the construction and operation of a new 470 megawatt electrical (MWe) thermal generating station and associated development (the 'Project').

1.1.2. C.GEN now wishes to apply for a non-material change to extend the timeframe by which the authorised development shall commence. The Order limits, proposed plant and generation equipment, remain the same as described in the Environmental Statement (referred to as the Principal Project Area). The Principal Project Area is centred at National Grid Reference: TA 157 198; and hereafter referred to as the 'Site' (displayed on **Figure 1**).

1.1.3. Five waterbodies were located within 250 m of the Site, which were identified as being suitable to support Great Crested Newt (GCN) *Triturus cristatus* populations.

1.2 ECOLOGICAL BACKGROUND

1.2.1. A Preliminary Ecological Appraisal (PEA) of the Site was carried out in May 2019 (WSP, 2019). The survey covered the entire Site including boundary features and was carried out by surveyors who are members of CIEEM and have experience of completing a PEA of sites containing similar habitat types. Suitable habitat for supporting GCN was identified during the PEA. Suitable habitat included scattered and dense scrub, a mosaic of tall ruderal and scrub interfaces, waterbodies, and waste material that could be used for hibernacula. These habitats were confined to the west of the Site.

1.2.2. BSG Ecology Ltd. (hereafter referred to as 'BSG Ecology') undertook GCN environmental DNA (eDNA) sampling on waterbodies in April, May and June of 2019. The eDNA sampling was undertaken on waterbodies within a 250 m search area of the proposed 'Killingholme Car Terminal' project (BSG Ecology, 2019), which is located to the west of the Site. The 250 m GCN survey boundary used by BSG Ecology overlaps with the Site. No GCN or evidence of GCN were recorded in on-Site waterbodies or waterbodies within 250m.

1.2.3. A GCN survey was also undertaken by Landscape Science Consultancy Ltd in 2011 to support the original DCO (Landscape Science Consultancy, 2010). A Habitat Suitability Index (HSI) assessment was carried out on two waterbodies within the Site, one to the south west and one to the north. Conventional GCN presence / absence surveys were carried out on the south west waterbody only as the waterbody to the north was deemed unsuitable for GCN. Bottle trapping, torching and egg searching was carried out on the waterbody to the south west. No GCN or signs of GCN were recorded. The Environmental Statement for the original DCO application concluded that GCN were likely to be absent from the Site and immediately adjoining land.

1.3 BRIEF AND OBJECTIVES

1.3.1. C.GEN commissioned WSP to undertake an eDNA survey of five waterbodies (displayed on **Figure 2**) within 250m of the Site. The purpose of the surveys was to determine if GCN are likely to remain absent from the Site, or if they may be present.

1.4 LEGISLATION

1.4.1. GCN have a high level of protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended), together they make it illegal to:

- Intentionally or deliberately capture or kill, or internationally injure great crested newts
- Intentionally or deliberately disturb great crested newts or intentionally or recklessly disturb them in a place used for shelter
- Damage or destroy a breeding site or resting place
- Deliberately take or destroy the eggs of such an animal
- Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection
- Sell, offer or expose for sale any great crested newt.

1.4.2. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England[1] for certain purposes.

[1] Natural England. Available at: https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects#history [Accessed 23 Jul. 2019].

2 METHODOLOGY

2.1.1. Environmental DNA (eDNA) surveys for great crested newts (GCN) were undertaken on five suitable ponds and standing water ditches within the Site, and within 250m of the Site.

2.1.2. The methodology used by WSP to collect the eDNA samples was in accordance with the Natural England technical advice note (Natural England, 2015). The survey was carried out between the 15th of April and the 30th of June (samples collected 26/06/2019) as Natural England will only accept eDNA survey results within this period. The surveys were carried out by an ecologist with a GCN survey license.

2.1.3. The field sampling protocol followed the steps outlined below. Gloves were worn at all times during the sampling process and samples were collected without entering the water to prevent disturbance of the substrate and to limit cross-contamination.

2.1.4. For each of the five waterbodies surveyed, twenty samples of 30 mL of pond water were collected using individual ladles, ensuring that sub-samples were taken as evenly spaced as possible around the waterbodies. The water samples were stirred gently with a ladle following collection.

2.1.5. Each sample was emptied into a Whirl-Pak bag. Once 20 samples had been taken, the Whirl-Pak bag was closed and shaken for 10 seconds to mix any DNA across the whole water sample.

2.1.6. Using the clear plastic pipette provided, c15 mL of water was taken from the Whirl-Pak bag and pipetted into a sterile tube containing 35 mL of ethanol to preserve any eDNA present. The tube was then shaken vigorously for 10 seconds to mix the sample and preservative.

2.1.7. This process was repeated for each of the 6 conical tubes in the kit. Before taking each sample, the water in the bag was stirred well to homogenize the sample because DNA will constantly sink to the bottom if not agitated.

2.1.8. The box of preserved sub-samples was then immediately returned to the lab at ambient temperature for analysis. An appropriate labelling system was used to ensure that the kits were supplied with a unique reference number (Biggs et. al, 2014).

3 RESULTS

3.1 SUMMARY OF RESULTS

3.1.1. The ponds were assigned numbers as follows: Pond 1, Pond 2, Pond 3, Pond 4 and Pond 5. Each sample taken also had a unique sample number which can be seen below. Results for all ponds came back as negative for evidence of GCN. A summary of the results is provided in **Table 3-1**. Additional information was also taken at each pond surveyed. This information can be seen in **Table 3-2.**

Table 3-1 – Results of eDNA Survey

Sample Number	Pond ID	Collected	Score	GCN Status	Are further surveys required?
2161	Pond 1	26/06/2019	0	Negative	No
2155	Pond 2	26/06/2019	0	Negative	No
2156	Pond 3	26/06/2019	0	Negative	No
2157	Pond 4	26/06/2019	0	Negative after dilution	No
2160	Pond 5	26/06/2019	0	Negative	No

Table 3-2 – Additional Information for Ponds Surveyed

Pond ID	eDNA Kit Reference	Cloud Cover (oktas)	Windspeed (Beaufort scale)	Rain (WSP scale*)	Temperature (°C)	Pond Turbidity (WSP scale*)	Vegetation Cover (%)	Approx. area of pond surveyed (%)	Number of inflows
Pond 1	GCN19-2161	8	4	1	13 ° C	20	30	90	1
Pond 2	GCN19-2155	8	4	1	13 ° C	20	70	60	1
Pond 3	GCN19-2156	8	2	1	14 ° C	20	20	40	1

Pond ID	eDNA Kit Reference	Cloud Cover (oktas)	Windspeed (Beaufort scale)	Rain (WSP scale*)	Temperature (°C)	Pond Turbidity (WSP scale*)	Vegetation Cover (%)	Approx. area of pond surveyed (%)	Number of inflows
Pond 4	GCN19-2157	8	3	1	14 ° C	70	80	30	0
Pond 5	GCN19-2160	8	2	1	14 ° C	20	20	60	1

*Pond turbidity: Pond Turbidity 0-5 (0 = completely clear, 5 = very turbid)
*Rain: Rain: 0=none, 1=drizzle, 2=light, 3=moderate, 4=heavy

3.2 ASSESSMENT AGAINST PREVIOUS FINDINGS

3.2.1. The habitats within the Site have not undergone a significant change and the Site remains largely the same as per the original GCN survey in 2010.

3.2.2. The updated findings of this GCN eDNA survey uphold the previous survey results obtained in 2010 and the assessment made in the ES. No GCN or evidence of GCN were recorded during the 2010 surveys by Landscape Science Consultancy.

3.2.3. In addition, no GCN were recorded during the surveys carried out by BSG Ecology in 2019. The collated updated information indicates that the Site is unlikely to support GCN. This assessment has not changed since the original assessment documented in the ES.

4 CONCLUSION

4.1.1. The Site is largely an industrial environment of predominantly hard standing. Other habitats identified include dense and scattered scrub, tall ruderal, semi-improved grassland, waterbodies (including ponds and standing water ditches) and associated marginal vegetation. The waterbodies on Site presented sub-optimal aquatic suitability for GCN. Terrestrial habitat for GCN is suitable but fragmented by hardstanding. The wider landscape outside the Site and beyond 250m from the Site supports suitable aquatic and terrestrial habitat.

4.1.2. No GCN or evidence of GCN was recorded during the eDNA sampling visits of the five waterbodies in 2019 by WSP. All waterbodies returned a negative result for GCN DNA. GCN eDNA sampling of waterbodies on Site and within 250 m were completed by BSG Ecology in April, May and June 2019. All waterbodies sampled by BSG Ecology returned a negative result. The results of these surveys for GCN align with the survey results collected in 2010.

4.1.3. The survey results indicate that GCN are likely absent from the Site and surrounding habitat. The assessment in the ES also found that GCN were likely absent from the Site, with no GCN recorded during the targeted surveys to inform the ES. The outcome of the 2019 assessment for GCN therefore remains the same as per the original assessment presented in the ES.

REFERENCES

PROJECT REFERENCES

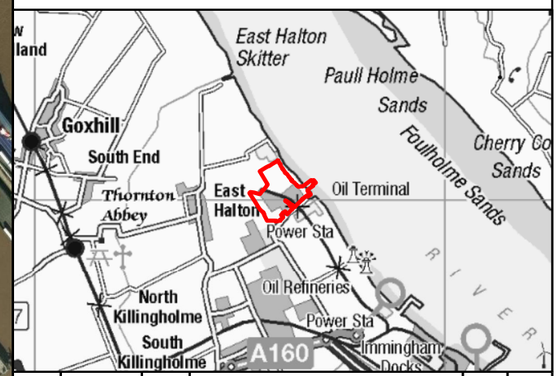
- WSP (July 2020) North Killingholme Power Project, DCO Amendments, Preliminary Ecological Appraisal.
- BSG Ecology (2019) Killingholme Car Terminal GCN Survey.
- C.GEN (2013) North Killingholme Power Project. Environmental Statement. Volume 1.
- Landscape Science Consultancy (2010) Great Crested Newt and Breeding Bird Survey for C.GEN.

TECHNICAL REFERENCES

- Natural England (2015). Great crested newts: surveys and mitigation for development projects. [online] Available at: https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects#history [Accessed 23 Jul. 2019].
- 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.

Key

Principal Project Area



REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: FINAL

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CLIENT: C.GEN

PROJECT: North Killingholme DCO Amendments

TITLE: Site Location Plan

SCALE @ A3:	CHECKED:	APPROVED:	
5,854 @ A3	LR	PD	
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70055743	JSdS	JSdS	10/01/19

DRAWING No: Figure 1 REV: -

Key

- Site Boundary
- 250m Survey Buffer

REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: FINAL

wsp

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CLIENT: C.GEN

PROJECT: North Killingholme DCO Amendments

TITLE: eDNA Survey Results

SCALE @ A3:	CHECKED:		APPROVED:
7,869 @ A3	LR		PD
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70055743	JSdS	JSdS	10/01/19

DRAWING No: Figure 2 REV: -

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