

Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement Appendices:
Volume 3

Appendix 7E: Great Crested Newt Survey Report

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For: National Grid Electricity Transmission

Quality information

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Appendix 7E Great Crested Newt Survey Report

7E.1 Introduction

7E.1.1 The Scheme

National Grid Electricity Transmission (NGET) has proposed to construct a High Voltage Direct Current (HVDC) Link from Peterhead in Aberdeenshire, Scotland to Drax in North Yorkshire referred to as the Scotland to England Green Link 2 (SEGL2). AECOM was instructed by NGET to conduct great crested newt (GCN) (*Triturus cristatus*) surveys on waterbodies along the English Onshore Scheme (EOS) i.e. the components of SEGL2 proposed terrestrially in England. The EOS extends between Fraisthorpe, East Riding of Yorkshire (approximate OS grid reference TA 16835 63441) and Drax, North Yorkshire (approximate Ordnance Survey (OS) grid reference SE 66811 27434). The GCN surveys were undertaken as part of the Phase 2 protected species surveys to inform the development of EOS design. The EOS is described in detail in **Chapter 3: Description of the English Onshore Scheme** of the Environmental Statement (ES).

SEGL2 is a major reinforcement of the electricity transmission system which will provide additional north-south transmission capacity across transmission network boundaries ensuring that green energy is transported from where it is produced to where it is needed. The EOS will include two underground cables which transition from the subsea cable route at the landfall site at Fraisthorpe and extend for approximately 69 km to a proposed converter station site at Drax, North Yorkshire.

The cables will be buried underground and require a temporary working width of 40 m to facilitate cable installation activities. The cables will be buried in a single trench approximately 1.5 m wide and 1.5 m deep. Multiple sections of Horizontal Directional Drilling (HDD) are proposed for the installation of the cables to avoid open-cutting key infrastructure routes (such as railways, A614, A1034, A1079 and A165 as well as several B roads and other minor roads) and watercourses, including the River Ouse, River Foulness and River Hull (as well as other streams and minor drains). As part of the EOS, a new permanent converter station is proposed to the east of the existing Drax Power Station.

7E.1.2 District Level Licensing and SEGL2

Following the submission of the SEGL2 Scoping report in Spring 2021, Natural England launched District Level Licensing (DLL) Schemes¹ for GCN for North and East Yorkshire areas within which the EOS is located. DLL is an alternative licensing approach established by Natural England for GCN which is based upon a national landscape scale conservation of the species which involves the DLL Scheme applicant agreeing a compensation payment for projects which may have impacts upon GCN habitats. The potential impacts to GCN habitats (ponds and terrestrial habitat) within a given DLL Scheme area is calculated by Natural England based upon Species Distribution Models which are presented as risk zone maps. The GCN risk zones; Red, Amber and Green seek to categorise the suitability of habitats present within the scheme area to support GCN based upon factors such as pond density and distribution, habitat type, topography and data records. The option to progress a DLL route for mitigation for GCN does not entirely rely upon the applicant collating GCN survey data as would be the case for 'traditional' European Protected Species mitigation licensing routes² where impacts are predicted. DLL can be secured using risk zone mapping data alone. Compensation payments are used to fund delivery of GCN mitigation through creation of pond habitats by DLL scheme partners such as Yorkshire Wildlife Trust in pre-selected offsite areas which are safeguarded from development and negate requirement for specific on site mitigation measures.

NGET initially conducted consultation with the Natural England DLL team in September 2021 to agree that a DLL could in principle be adopted for the EOS and clarify the level of survey information which would be required to support a DLL application. Natural England confirm that the DLL route could be

¹ <https://www.gov.uk/government/publications/great-crested-newts-district-level-licensing-schemes>

² <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

adopted based upon a hybrid approach; partially using the risk model data they hold and taking into account the survey data collated by AECOM on behalf of NGET in 2021, as per the approach set out at Scoping. As such no additional eDNA surveys have been conducted in 2022. Where ponds within 250 m of the planning application boundary have not been surveyed the DLL calculation is based upon the Natural England risk modelling. A DLL Impact Assessment and Conservation Payment Certificate (IACPC) and associated compensation payment has been agreed between Natural England and NGET which commits to the adoption of the DLL route for the EOS following any subsequent agreement of the planning permission. A redacted copy of the countersigned DLL IACPC is appended as **Appendix 7G to Chapter 7: Ecology and Nature Conservation** of the ES.

As detailed in the **Chapter 7: Ecology and Nature Conservation**, GCN have therefore been scoped out of formal impact assessment based upon the commitment by NGET of the DLL route in accordance with Natural England guidance for Ecological Impact Assessment (EclA) and DLL.

To provide context to the desk study and survey work conducted in 2021 as was committed to via the Scoping report, this GCN report is provided for supplementary information purposes only and is not considered to be required to specifically inform the EclA for GCN for the EOS.

7E.1.3 Defining the Study and Survey Areas

Within this report the following terminology is used when referring to the geographic areas within which the GCN work has been conducted:

- Desk Study Area (hereafter referred to as the 'Study Area') – the area which was subject to collection of background information e.g., desk study records for amphibians to supplement the findings of the survey work; this comprises the planning application boundary plus a 1 km radius; and
- GCN Survey Area (hereafter referred to as the 'Survey Area') – this is the area within which the GCN survey work has been conducted (the planning application boundary plus a radius of 250 m); and is shown on Figure 1.

7E.1.4 Survey Scope

As set out in the Preliminary Ecological Appraisal Report (Appendix 7A), initially the Study Area and Survey Area for GCN were based on the EIA Scoping Boundary plus a 250 m radius. However, as the EOS design has evolved the areas have been refined, and the information presented in this report is relevant to the final design and the planning application boundary.

As part of the initial Extended Phase 1 Habitat survey and desk study scope, a total of 286 ponds³ were identified and mapped. However, the Survey Area has been subsequently refined throughout the development of the EOS design, and laterally defined based on the footprint of the planning application boundary plus a 250 m radius (as defined above). Therefore, any ponds outside this Survey Area were excluded from the GCN survey scope, as they are not considered relevant to the EOS.

In total 125 ponds were identified as potentially suitable for GCN within the Survey Area and where accessible were subject to GCN assessment and survey in 2021.

7E.1.5 Survey Aims and Objectives

The aim and objectives of the survey work and the subsequent report presented here were to:

Aim

- Determine the status and distribution of GCN within the Survey Area in order to inform the ES for the EOS.

³ Where the term 'ponds' is used throughout this report this seeks to capture a common terminology for all types of standing waterbodies in general which could act potential suitable breeding sites for GCN, including natural pond, man-made waterbodies such as residential garden ponds or created farm drainage ponds, temporary standing water areas but which demonstrate aquatic vegetation, and other water features such as standing water in 'closed' drains, recreational waterbodies and other types of features which may be held in sites such as quarries.

Objectives

- Review existing ecological data to identify any records of GCN within the Study Area;
- assess the presence of potentially suitable waterbodies located within the Survey Area using aerial mapping and online sources;
- conduct habitat suitability assessments on identified waterbodies, followed by detailed surveys of suitable waterbodies (which may support amphibians) to confirm presence/likely absence of GCN;
- record other species of amphibian or aquatic mammal; and
- evaluate the survey results to determine the nature conservation value of the Survey Area for GCN.

Relevant legislation and planning policy is detailed in Annex 1, and background information on GCN ecology is provided in Annex 2.

7E.2 Methodology

7E.2.1 Desk Study

A data search was conducted in 2021 to support the initial scoping stage of the EOS. This search requested records of great crested newt and other protected amphibian species within the Study Area from the North and East Yorkshire Ecological Data Centre (NEYEDC).

The desk study was restricted to data within the last 10 years (post 2011), so that the data collated would be more likely to reflect the current (rather than historic) baseline conditions associated with the Study Area.

In addition, a search of the databases; Granted European Protected Species Applications for Amphibians (England) and the Great Crested Newt Class Survey Licence Returns (England) provided by Natural England and available on the Multi-Agency Geographical Information for the Countryside (MAGIC) website was undertaken to supplement the desk study.

The desk study also involved an online search of aerial imagery and ordnance survey plans to further assess the potential presence of ponds/waterbodies within the Study Area, in particular within the Survey Area (as shown on Figure 1). Whilst GCN can disperse into terrestrial habitats located up to 500 m from a given breeding pond, based upon the landscape and topography of the Study Area, combined with presence of barriers to dispersal for amphibians within the survey area i.e. local roads, it is considered that a buffer of 250 m from the planning application boundary is appropriate when determining the potential presence of waterbodies and GCN populations which may be present.

7E.2.2 Field Survey

7E.2.2.1 Habitat Suitability Index Assessment

The presence of ponds was identified from a mixture of aerial photography or subsequent species/habitat surveys. All waterbodies within the Survey Area were scoped in for Habitat Suitability Index (HSI) assessment.

The HSI assessment was devised to quantitatively assess the suitability of water bodies to support GCN. The HSI for GCNs was developed by Oldham et al. (Ref 1) and is a numerical index between zero (indicating unsuitable habitat) and one (representing optimal habitat). The HSI incorporates ten suitability factors, all of which are thought to affect GCN. The full methodology is set out in Annex 2.

HSI scores are categorised in terms of pond suitability for GCN as below:

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.60 – 0.69 = average

- 0.7 – 0.79 = good
- >0.8 = excellent

The system is not sufficiently precise enough to conclude that any particular waterbody with a high score will support GCN or that a waterbody with a low score will not support GCN. However, it is a useful tool for establishing the potential suitability of ponds for breeding GCN to support further survey scoping.

7E.2.2.2 Environmental DNA Survey

Environmental DNA (eDNA) survey is a relatively recently established technique approved by Defra and Natural England as an alternative technique to establish the presence/absence of the GCN within aquatic habitats.

In aquatic environments, eDNA is diluted and distributed in the water. Sources of eDNA in pond water derive from faeces, mucous, gametes, shed skin and carcasses. The eDNA survey involves the collection of water samples for laboratory analysis for the DNA of species of interest, in this case GCN. The sampling procedure is prescribed in the published method and requires that the water sample be taken between mid-April and end of June.

The eDNA surveys were undertaken in accordance with the published method (Ref 5) using sampling kits and analysis services provided by one of the approved eDNA suppliers (Surescreen and FERA). eDNA sampling resulted in a result of either positive (GCN eDNA was detected in the water sample), negative (no GCN eDNA was detected in the sample and GCN are likely absent) or inconclusive (the sample was degraded or otherwise could not provide a positive or negative result).

7E.2.3 Evaluation Methodology

The method of evaluation that has been utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine' (Ref 6). These give advice on scoping and carrying out environmental assessments and place appraisal in the context of relevant policies. Data received through consultation, desk-based studies and field-based surveys are used to allow relevant ecological features (i.e. designated sites, ecosystems, habitat and species) of importance (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

Ecological features; in this case legally protected species i.e. the great crested newt, may be important for multiple different reasons (e.g. rarity in a particular geographic context; role in habitat connectivity; or a species on the edge of their range). Relevant reasons for which an ecological feature is important are described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference:

- international (i.e. European);
- national (i.e. England);
- regional (i.e. Yorkshire and the Humber);
- county (i.e. East Riding of Yorkshire/North Yorkshire (Drax area));
- local (i.e. Survey Area and up to 2 km radius); and
- negligible (used where the value is lower than the Local level).

7E.2.4 Survey Limitations

There were no limitations to the undertaking of GCN surveys due to COVID-19 restrictions implemented by UK government in spring 2021.

Land access could not be achieved to allow access to conduct HSI and/or eDNA surveys to 32 ponds scoped into the assessment. Ponds within the Survey Area where surveys were not completed, and which are potentially suitable for GCN, are assumed to support GCN and have been addressed via the

DLL calculation through the adoption of the Natural England Risk Zones modelling maps. Therefore overall, therefore this is not considered to be a limitation to the impact assessment and mitigation approach as committed to within **Chapter 7: Ecology and Nature Conservation**.

7E.3 Results

7E.3.1 Desk Study

58 records of GCN were provided from within the Study Area from NEYEDC. The closest of these is associated with the villages of Little Kelk and Newsholme and are within the Survey Area. Surveys consistent with the recommended methodology were conducted at Little Kelk by a licensed GCN surveyor in 2016 of ponds (P28, 28a, 29 and 30) within 100 m of the planning application boundary, which identified a large GCN population (peak count 513). Desk study records obtained by the desk study are shown on Figure 1.

Four European Protected Species Mitigation Licences (EPSML) for GCN have been granted within the Study Area. The details for these licences are shown in Table 1 below and shown on Figure 1.

Table 1: Details of EPSML's granted for GCN within the Study Area

Ref. No.	Approximate Grid Reference	Location	Licence Start/ End dates	Damage to?		Destruction of?	
				Breeding site	Resting place	Breeding Site	Resting place
2016-26596-EPS-AD2-1	SE86794153	West of Market Weighton	10/04/17 – 30/06/21	N	Y	N	Y
2016-26596-EPS-AD2-2	SE86804149	West of Market Weighton	21/04/20 – 30/06/21	N	Y	N	Y
2014-2372-EPS-MIT	SE86794126	West of Market Weighton	20/08/14 – 30/06/16	N	Y	N	Y
EPSM2 013-6837	SE76692997	East of North Howden	10/12/13 – 31/03/14	N	Y	N	Y
EPSM2 012-4739	SE76692997	East of North Howden	25/02/13 – 31/10/13	N	Y	N	Y

Based upon a detailed review of aerial imagery, OS Mastermap Surface Water layers conducted at the initial stage of the desk study, a total of 265 waterbodies were identified initially within the initial Study Area (EIA Scoping Boundary plus 250 m). Twenty-one additional waterbodies were identified during the completion of subsequent field surveys, which were deemed suitable to support GCN and were not marked on OS maps. Conversely a number of waterbodies within the Survey Area which had been identified by the map searches were initially assessed and were found to show no evidence of a waterbody currently being present, not hold any water or evidence of having been a waterbody i.e. absence of marginal or aquatic vegetation. A total of 286 waterbodies were identified for survey in 2021 within this wider original Survey Area. As the EOS design evolved the Survey Area focussed on those ponds within 250 m of the planning application boundary, where 141 are considered to be applicable for assessment of the EOS.

7E.3.2 Field Survey

7E.3.2.1 Habitat Suitability Index Assessment

Results of the HSI assessment in 2021 are provided in Annex 3 (Table C1), in addition to descriptions of the pond and pond locations. The individual scores for each of the ten HSI components for each pond are further detailed in Annex 4 along with photographs of the waterbodies where applicable. The locations of waterbodies subject to assessment are shown on Figure 1.

A HSI assessment was undertaken in 2021 on 131 water bodies within the Survey Area (three of which are within the cable working width). Of these waterbodies, 36 were scoped out and were not subject to further assessment due to being unsuitable for GCN or dry/no longer present. A further 155 ponds were not assessed due to land access constraints or they were scoped out of the requirement to be surveyed due to their distance greater than 250 m from the planning application boundary.

7E.3.2.2 Environmental DNA Analysis

The results of the eDNA analyses are detailed in **Annex 5**. Full analysis reports as received from the external eDNA analysis organisations are provided as Annex 5.

eDNA sampling was conducted across 35 ponds between April and the end of May 2021, 15 of which are not considered in the assessment due to distance from the planning application boundary of the EOS. A further two ponds were deemed unsuitable for eDNA sampling due to health and safety issues with sample collection. Of the ponds sampled, three returned positive results (P230, P225 and P228). Of these only P230 is located within 250 m of the planning application boundary.

All other ponds subject to eDNA surveys returned Negative eDNA results by laboratory analysis.

Several ponds within the Survey Area are now greater than 250 m from the planning application boundary following development of the final EOS design. These ponds are not relevant to the EclA, as they are outside the potential zone of influence (250 m) of the EOS for terrestrial habitats supporting GCN. However, the results of the eDNA surveys conducted on these ponds are provided for information within Table C-1 as they provide further evidence of the status of likely absence of GCN populations within the wider local area.

7E.4 Conclusions and Evaluation

In summary, GCN were identified by eDNA surveys to be present within three waterbodies located within 250 m of the planning application boundary, of these three waterbodies one (P030 located at Little Kelk) is located within the extents of the planning application boundary. Whilst not able to be surveyed by AECOM for the purposes of the EOS, a further two waterbodies; P028 and P028a, also located at Little Kelk and within 250 m of the planning application boundary were assumed likely to support GCN based upon desk study data collated to support a planning application at this location it would be reasonable to assume GCN could still be present at this location.

Based upon the survey results it is concluded that GCN are present, however likely to only be present in distinct locations within the Survey Area only and would represent a species constraint to the EOS and therefore are scoped in as an ecological feature for consideration within the EclA.

Whilst the presence of common species of amphibians should be considered by the EOS were waterbodies to be affected, they do not present a significant legal constraint to the EOS. The value of the Survey Area for common species of amphibian is not considered to be more than Local value in accordance with CIEEM evaluation methodology (Ref 6).

7E.5 References

Ref 1: 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.

Ref 2: Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework. Published on the UK Government website: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Ref 3: East Riding of Yorkshire Council (2010). East Riding of Yorkshire Biodiversity Action Plan Strategy (Version 1). East Riding of Yorkshire Council, Beverley.

Ref 4: North Yorkshire County Council, Selby District Council and the Selby BAP Partnership (2004) Approved Selby Local Biodiversity Action Plan. Selby District Council, Selby.

Ref 5: Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. & 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.

Ref 6: CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Ref 7: English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough