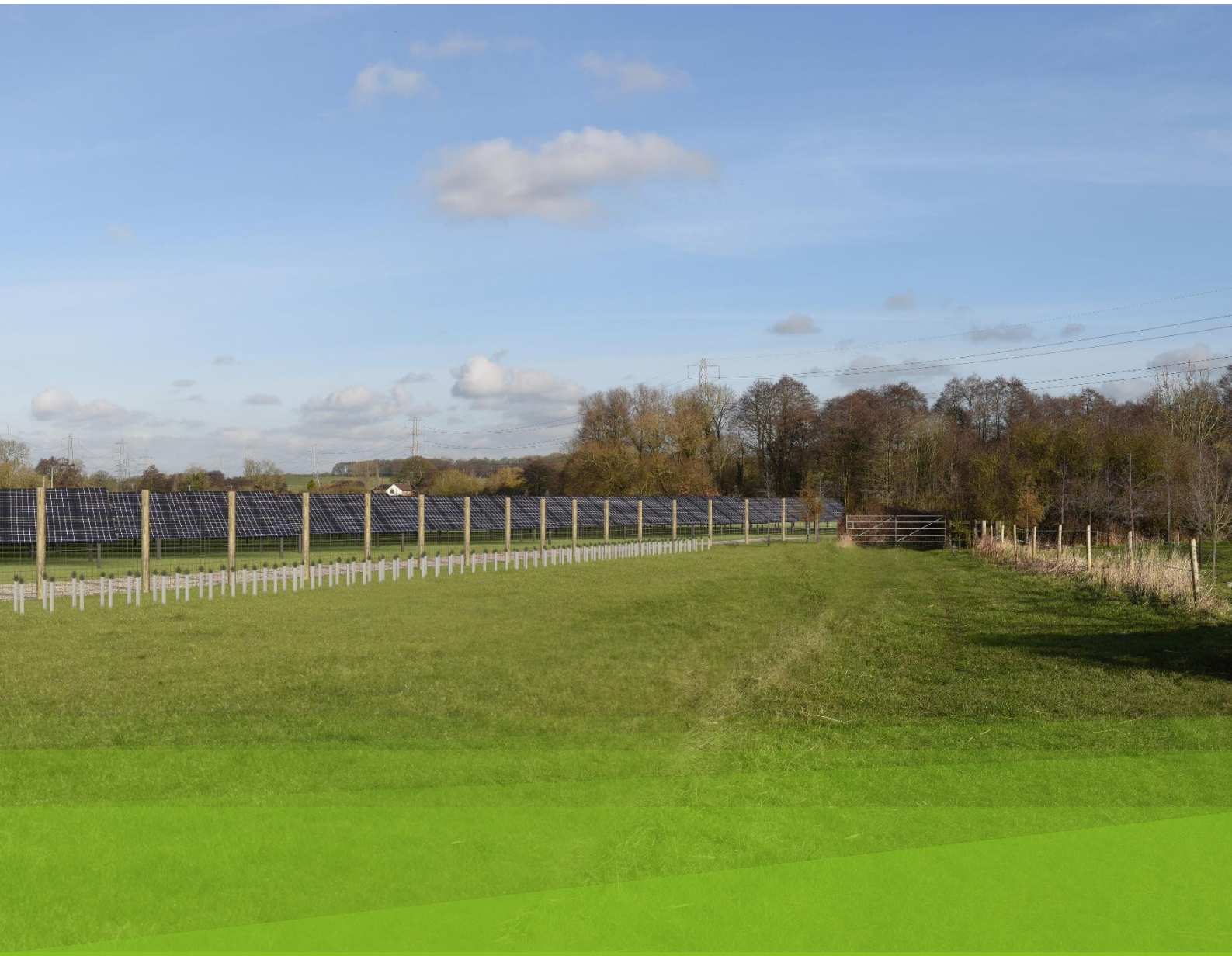

OAKLANDS FARM SOLAR PARK

Applicant: Oaklands Farm Solar Ltd

Environmental Statement
Appendix 6.10 – Great Crested Newt Survey Report
January 2024
Document Ref: EN010122/APP/6.1/Appx 6.10
Revision: -

Planning Act 2008
Infrastructure Planning (Application: Prescribed Forms and Procedure) Regulations 2009 - 5(2)(a)

Oaklands Farm Solar Park - Environmental Statement Volume 3

Appendix 6.10: Great Crested Newt Survey Report

Final report
Prepared by LUC
January 2024

Oaklands Farm Solar Limited

Oaklands Farm Solar Park
Technical Appendix 6.10: Great Crested Newt Survey Report

Version	Status	Prepared	Checked	Approved	Date
1.	First issue	J. Bernard T. Hicks	R. Turner	D. Green	08.04.2022
2.	Second issue	T. Hicks R. Turner	R. Turner	D. Green	15.04.2022
3.	Third issue – following design freeze in February 2023	J. Bernard	R. Turner	D. Green	06.04.2022
4.	Fourth issue - updated following revised scheme design in October 2023	R. Turner	R. Turner	D. Green	20.10.2023
5.	Fifth issue – following client comment with updated figures	H. Gillon	D. Green	D. Green	17.01.2024

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FS566056
EMS566057
OHS627041

Contents

Chapter 1
Introduction

Terms of Reference

1.1 In April 2021, LUC was appointed by Oaklands Solar Farm Limited to provide ecological support to inform an application to construct and operate Oaklands Farm Solar Park, a proposed solar photovoltaic (PV) electricity generating facility, hereafter referred to as 'the Proposed Development'.

1.2 The Phase 1 Habitat Survey, which is reported separately (**Appendix 6.5: Phase 1 Habitat Survey Report**) identified suitable habitat within the Site boundary for great crested newt (GCN) *Triturus cristatus*. This report presents the baseline survey findings, in respect of great crested newt, and has been prepared to inform proposals, including avoidance of impacts, mitigation requirements, and provision of appropriate enhancements.

1.3 The report has informed an Ecological Impact Assessment (EcIA) and forms part of the Environmental Statement (ES), in support of a planning application for the Proposed Development. Assessment of impacts, mitigation requirements and enhancement measures are provided as part of the ES Chapter and are not detailed within this report.

1.4 This report has been prepared for the exclusive use of Oaklands Solar Farm Limited. No part of this report should be considered as legal advice.

This report relates to Oaklands Farm and land within the grid cable route, including Park Farm, Fairfield Farm and Drakelow Power Station, hereafter referred to as 'the Site'.

Park Farm is located with the grid cable route corridor only and therefore the impacts associated with the cables construction and operation were considered minimal. GCN surveys were completed at Park Farm to inform the earlier iterations of the scheme design, the findings of which are presented in this report to provide additional context on the value of the site for this species. Fairfield Farm was included within this study area, due to close proximity to Park Farm, with habitats appraised and waterbodies within 250m of the Site

boundary at Fairfield Farm assessed. Habitat appraisals and waterbody assessments for Oaklands Farm are reported on separately[1].

Site Description

1.5 The Site boundary is located to the south east of Walton-on-Trent in South Derbyshire (OS Central Grid Reference: SK 23456 17577). The Site boundary comprised of land within Oaklands Farm, Park Farm and Fairfield Farm land-holdings, which are currently used for arable cropping and grazing, and Drakelow National Grid Substation in the north.

1.6 The wider area is comprised of a mosaic of agricultural and pastoral land and woodland with Rosliston Forestry Centre located to the east and the River Trent located to the west of the Site boundary.

Proposed Development Description

1.7 The Proposed Development comprises a solar farm with an associated battery energy storage facility. The Proposed Development would have a generating capacity of over 50MW and would be situated on 191 hectares of land at Oaklands Farm to the south-east of Walton-on-Trent and to the west of Rosliston in south Derbyshire. The solar farm itself, comprising photovoltaic panel arrays, a central electricity substation and Battery Energy Storage System together with access, landscaping and other works would be located on 135 hectares of agricultural land currently in use for arable production and grazing. A high voltage underground electricity cable would then run through land at Fairfield Farm and Park Farm to the north to connect the solar farm to the national grid via an electricity substation located at the former Drakelow Power Station which sits south of Burton-upon-Trent. As the Proposed Development would be an onshore generating station with a generating capacity of over 50MW an application for a Development Consent Order is being made under the Planning Act 2008 to the Planning Inspectorate, for determination by the Secretary of State for Energy Security and Net Zero.

Previous Surveys at Oaklands Farm

1.8 Habitat Suitability Index (HSI) and Environmental DNA (eDNA) surveys for Oaklands Farm were undertaken in 2020 and reported separately[1]to inform this planning application. The

[1] Arcus, (2020). *Preliminary Ecological Appraisal: Oaklands Solar Farm and Grid Connection Route prepared on behalf of BayWa r.e. UK Limited*

survey findings are still considered valid in cognisance with advice given by CIEEM on the lifespan of ecological reports and surveys[2]. The survey results for Oaklands Farm are summarised in Chapter 3 and discussed in Chapter 4. The full methodology and results are available within the previous report[1].

Policy and Legal Considerations

1.9 This baseline report has been prepared in cognisance with relevant legislation and policy. Further detail is provided in **Appendix A**; however, the following primary documents are of relevance:

- The Wildlife and Countryside Act of 1981[3].
- The Countryside and Rights of Way Act (CRoW Act), 2000[4].
- The Natural Environment and Rural Communities Act 2006 (NERC Act)[5].
- The Conservation of Habitats and Species Regulations 2017[6].
- The National Planning Policy Framework (2023)[7].
- South Derbyshire District Local Plan Part 1 (Adopted June 2016)[8].
- Department for Energy and Climate Change. 2011. Overarching National Policy Statement for Energy (EN-1)[9] and Draft NPS EN-1 for designation dated 2023[10].

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[2] CIEEM (2019). *Advice Note: On the Lifespan of Ecological Reports and Surveys.* Winchester: Chartered Institute for Ecology and Environmental Management.
[3] The Wildlife and Countryside Act 1981. Available at: https://www.legislation.gov.uk/ukpga/1981/69. [Accessed 29/09/23]
[4] The Countryside and Rights of Way Act (CRoW Act), 2000. Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents [Accessed 29/09/23]
[5] The Natural Environment and Rural Communities Act 2006. Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents [Accessed 29/09/23]
[6] The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made [Accessed 29/09/23]
[7] Department for Levelling Up, Housing and Communities 2023) The National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework—2 [Accessed 29/09/23]
[8] South Derbyshire District Council (2016) Local Plan Part 1 (Adopted June 2016). Available at: https://www.southderbyshire.gov.uk/our-services/planning-and-building-control/planning/planning-policy/local-plan/adopted-local-plan [Accessed 29/09/23]
[9] Department for Energy and Climate Change (2011) Overarching National Policy Statement for Energy. Available at: https://assets.publishing.service.gov.uk/media/5a79522de5274a2acd18bd53/1938-overarching-nps-for-energy-en1.pdf [Accessed 29/09/23]
[10] Department for Energy Security and Net Zero (2023) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/media/655dc190d03a8d001207fe33/overarching-nps-for-energy-en1.pdf [Accessed 16/01/24]

- Department for Energy and Climate Change. 2011. National Policy Statement for Renewable Energy Infrastructure (EN-3)[11] and Draft NPS EN-3 for designation dated 2023[12].
- Department for Energy and Climate Change. 2011. National Policy Statement for Electricity Networks Infrastructure (EN-5)[13] and Draft NPS EN-5 for designation dated 2023[14].

[11] Department for Energy and Climate Change (2011) National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/media/5a79c422e5274a684690bf53/1940-nps-renewable-energy-en3.pdf [Accessed 29/09/23]
[12] Department for Energy Security and Net Zero (2023) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/media/655dc352d03a8d001207fe37/nps-renewable-energy-infrastructure-en3.pdf [Accessed 16/01/24]
[13] Department for Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/media/5a74877840f0b61938c7e2d9/1942-national-policy-statement-electricity-networks.pdf [Accessed 29/09/23]
[14] Department for Energy Security and Net Zero (2023) Draft National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/media/655dc25e046ed400148b9dca/nps-electricity-networks-infrastructure-en5.pdf [Accessed 16/01/24]

Chapter 2
Methods

Desk Study

2.1 A review of biological records within 2km of the Park Farm was undertaken as part of the Phase 1 Habitat Survey, which included a review of great crested newt (GCN) records. This is reported separately in **Appendix 6.5: Phase 1 Habitat Survey Report** in Volume 3 of the ES.

2.2 A review of the Preliminary Ecological Appraisal Report for Oaklands Farm[1] was also undertaken. This is report separately in **Appendix 6.3** in Volume 3 of the ES.

Field Survey

Habitat Appraisal

2.3 The Extended Phase 1 Habitat Survey in April 2021 included an assessment, based on the professional judgement of experienced surveyors, of the potential for habitats within Park Farm and the immediate surroundings to support GCN. This included consideration of all GCN activity, such as foraging, dispersing, sheltering, hibernating and breeding[15]. It should be noted that this assessment included additional areas of land at Park Farm, which have since been excluded from the Site boundary.

2.4 Further to this, an Extended Phase 1 Habitat Survey was undertaken on 26th April 2022 Fairfield Farm and on 11th July 2022 at Drakelow Power Station by experienced surveyors, which assessed the suitability of habitats to support GCN.

2.5 Particular attention was paid to waterbodies which may support breeding GCN, including those within 500m of the Park Farm boundary (the maximum distance GCN are likely to travel between breeding and terrestrial habitats).

[15] Langton, T., Beckett, C. And Foster, J. (2001). *Great Crested Newt Conservation Handbook.* Halesworth:.Froglife,

Habitat Suitability Index (HSI)

2.6 All accessible and suitably connected waterbodies within Park Farm landholdings and a 500m buffer[16] and waterbodies at Drakelow Power Station were subject to a HSI assessment to determine their relative suitability for providing breeding habitat for GCN.

2.7 The HSI[17] scoring utilises ten suitability indices which affect the suitability of waterbodies for GCN, such as pond size, levels of shading and macrophyte cover. The HSI category scores are shown below in **Table 2.1** below.

Table 2.1: HSI Category Scores

HSI	Pond Suitability
<0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Moderate
0.7 – 0.79	Good
>0.8	Excellent

2.8 The HSI score was used to inform the need for additional surveys to identify the potential presence and size of resident GCN populations.

2.9 The HSI assessment was carried out on 21st April 2021 by Rebecca Turner BSc (Hons) MSc ACIEEM (Natural England GCN class license number: 2015-15949-CLS-CLS) and Tom Hicks BSc (Hons), a Qualifying Member of CIEEM (Natural England GCN class license number: 2021-10075-CLS-CLS) at Park Farm and on 11th July 2022 by Tom Hicks at Drakelow Power Station.

[16] This buffer area was based on a previous iteration of the scheme design and as such includes an assessment of ponds located over 500m from the latest site boundary.
[17] Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000). *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus).* Herpetological Journal, 10: 143-155.

eDNA Survey

2.10 Where waterbodies were deemed to be suitable for GCN, eDNA sampling was carried out to confirm presence or likely absence of this species, and to inform requirements for full GCN surveys.

2.11 Water samples were taken using the methods outlined in good practice guidance[18] and are summarised below. A new sample kit was used at each pond to ensure cross contamination of samples was avoided.

2.12 In line with good practice guidance[11], 20 samples of 30ml of pond water were collected from around each pond. Sample locations were spread out evenly around the pond edge, ensuring that samples were collected from both open water and vegetated areas, if present, and, where possible, from areas of water greater than 10cm deep. Once all 20 samples were collected the bag was closed and shaken for ten seconds to ensure any DNA present was mixed across the sample. Fifteen mL of water was then transferred from the bag into each of the six sample tubes containing preservative. Finally, each tube was shaken for ten seconds to mix the water sample and preservative. Samples were then sent to the lab at SureScreen Scientifics Ltd for analysis.

2.13 The eDNA survey was undertaken at Park Farm on 21st April 2021 by Rebecca Turner and Tom Hicks during suitable weather conditions and within the optimal survey window for eDNA surveys.

Limitations

Drakelow National Grid Substation

2.14 No access was available for ponds located within 500m of Drakelow Power Station during the survey window for undertaking eDNA surveys, although HSI assessments were completed of the accessible Pond 11, and ditches 4 and 5 within Drakelow. These waterbodies scored Poor, Average, and Below Average respectively, with the nearby waterbodies sampled negative for GCN. In addition, the scheme will not result in the loss of any breeding habitat, and any loss of suitable terrestrial habitat for great crested newt will be highly localised and small

[18] Biggs J. *et al* (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*. Oxford: Freshwater Habitats Trust.

scale. Therefore, this was not considered a major limitation to the robustness of the overall survey.

Fairfield Farm

2.15 Ponds within 500m of Fairfield Farm were not subject to further eDNA survey due to access and timing constraints. However, as surveys were conducted within 250m of Park Farm, the majority of waterbodies within this area were assessed, with additional waterbodies included within the previous survey[1]. In addition, as Fairfield Farm is located within the grid cable route corridor only, impacts associated with operation were considered minimal, with loss of suitable terrestrial habitat highly localised and small scale.

eDNA Survey

2.16 eDNA samples can currently be obtained between the core period of 15th April and 30th June. Although samples taken outside this period can show presence such samples cannot be used to determine absence. Variations in weather patterns (for example unseasonably cold weather) can affect animal movements and it is possible that samples taken very early in the season may be inconclusive. This survey was undertaken during the optimal survey season (21st April 2021) and during suitable weather conditions.

2.17 In certain situations, eDNA survey results may not be conclusive. The presence of eDNA can be patchy and largely depends on location of animals within a pond. Sampling multiple parts of a pond increases the chance of successfully collecting eDNA. There is therefore a risk that poorly accessible ponds, with few available sampling points, will not allow sufficient samples to be taken to confidently conclude that GCN are not present.

2.18 An eDNA survey was not undertaken for Pond 8 as the water could not be sampled safely due to the bank profile. This was not considered a constraint to the survey as the pond was determined to be of 'poor' suitability for GCN during the HSI and extensive eDNA survey effort was undertaken for numerous functionally connected ponds (including Pond 9, only 40m west) which were all returned negative results for GCN eDNA.

General Limitations

2.19 It is important to note that ecological surveys provide information regarding the ecological baseline of a Site for only a 'snapshot' of time. Therefore, if significant time lapses between the surveys and the further development or implementation of proposals, updated ecological

surveys may be required to identify any change in the baseline, such as natural succession of habitats, or local extinction or colonisation of species. Therefore, if a year lapses between the progressions of development proposals, it is recommended that ecological advice is sought regarding the applicability of the survey findings, in cognisance with advice given by CIEEM on the lifespan of ecological reports and surveys[2].

Chapter 3
Results

Desk Study

3.1 Full details of the review of biological records are provided in **Appendix 6.5: Phase 1 Habitat Survey Report** in Volume 3 of the ES.

3.2 In summary, the desk study records identified a number of records of GCN within the 2km search area. The closest record was c. 800m southeast of the Park Farm in 2003 and the most recent record was c. 2.8km northeast of the Park Farm in 2016.

3.3 Twenty waterbodies were identified within 500m of the Site boundary[19]. Three of the waterbodies were scoped out of further assessment due to significant barriers to dispersal, including Burton Road and brooks to the east and west. The locations of these waterbodies are shown in **Figure 6.10.1, Appendix B.**

3.4 A further three ponds were recorded within 500m of the Drakelow Power Station in the north and were not assessed for their suitability to support GCN due to access restrictions. The pond and two ditches on Site at Drakelow Power Station were surveyed and accounted for in para 3.3 above.

Previous Surveys at Oaklands Farm

3.5 The previous surveys at Oaklands Farm[1] identified 24 ponds within 250m of the Oaklands Farm boundary. Fifteen ponds were not surveyed due to access restrictions. The nine accessible ponds were assessed for their suitability to support GCN. Six ponds were scoped out of further assessment as they did not support water at the time of the survey. The three ponds which supported water were subject to a HSI assessment. The HSI survey determined two ponds had potential to support GCN and were subsequently subject to eDNA surveys. Both ponds returned negative results for GCN eDNA. GCN were therefore considered likely to be absent from these waterbodies. The locations of these waterbodies surveyed by Arcus are

[19] This is based on the previous site boundary as detailed in the PEIR. However, remains applicable to the latest version of the scheme design and application boundary.

shown in **Figure 6.10.2, Appendix B.** Further detail of these surveys are presented in **Appendix 6.3** in Volume 3 of the ES.

Field Survey

Habitat Appraisal

Terrestrial

3.6 The majority of the Site comprised intensively grazed improved grassland or arable fields which were largely unsuitable for GCN. Hedgerows, scrub and tall ruderal vegetation provided some opportunities for foraging, dispersing, sheltering and hibernating GCN. However, due to the intense grazing pressure these habitats were largely functionally isolated from other suitable habitats and in many places directly poached by livestock. Therefore, the suitability of this habitats for GCN is significantly reduced.

3.7 Small areas of woodland and scrub habitat and a single ditch were recorded in the north of the Site at Drakelow Power Station. Adjacent to the Site at Drakelow Power Station was a single pond to the west and a single ditch to the east, which are location within a mosaic of woodland, scrub and grassland habitat. These habitats provide suitable breeding and terrestrial opportunities for GCN.

3.8 Additional suitable habitats adjacent to the Site included woodland and scrub to the west of Park Farm and to the north of Oaklands Farm, which are connected to suitable habitat for GCN in the wider landscape. Although, an unnamed watercourse was noted to the west of Park Farm and to the north of Oaklands Farm, which is likely to act as a barrier for GCN dispersal.

Habitat Suitability Index (HSI)

3.9 HSI surveys were undertaken for eleven waterbodies, a summary the HSI assessments is provided in **Table 3.1 below.** Full HSI results are provided within **Table C.1, Appendix C.**

3.10 Out of the remaining six waterbodies, four of them were dry at the time of survey and two could not to be accessed due to restrictions, therefore these were not subject to HSI.

Table 3.1: Habitat Suitability Index Assessment

Waterbody Reference	Description	HSI Score	Suitability
Pond 1	A small pond offsite bound by trees and scrub in the middle of the Park Farm landholdings adjacent to the Site in the east.	0.74	Good
Pond 4	A shaded small offsite pond in the eastern field of the Park Farm landholdings approximately 433m to the east.	0.58	Below average
Pond 5	An offsite pond within woodland and scrub adjacent to the Site in the west.	0.78	Good
Pond 8	A large offsite pond located near the main farm buildings and yard adjacent to the Site.	0.30	Poor
Pond 9	A small pond located c. 35m northwest of the Site.	0.44	Poor
Pond 10	A small woodland pond c.65m east of the Site.	0.65	Average
Pond 11	A pond located in Drakelow Power Station in an area of woodland.	0.46	Poor
Ditch 1	A offsite wet ditch adjacent to the hedgerow in the centre of Park Farm landholding located c.130m to the east of the Site.	0.42	Poor
Ditch 3	A offsite wet ditch c. 150m east of the Site running along the edge of and through a woodland block.	0.69	Average
Ditch 4	A wet ditch located in Drakelow Power Station in an area of woodland, scrub and grassland.	0.61	Average
Ditch 5	A wet ditch located in Drakelow Power Station in an area of woodland, scrub and grassland.	0.57	Below average

eDNA Presence or Absence Survey

3.11 With the exception of Pond 8, Pond 11, Ditch 4, and Ditch 5 all of the waterbodies within **Table 3.1** were subject to eDNA surveys to determine the presence or absence of GCN. Pond 8 was not surveyed as water samples could not be taken safely due to the bank profile. Access was not given to Pond 11, Ditch 4, and Ditch 5 so they could not be surveyed.

3.12 All waterbodies returned a negative result for GCN eDNA. GCN were therefore considered likely to be absent from these waterbodies. Full eDNA results are provided within **Appendix C**.

Chapter 4
Discussion

4.1 Relevant legislation relating to GCN is summaries in **Appendix A.**

4.2 The majority of the Site did not comprise terrestrial habitat suitable for supporting GCN because it lacked the structural complexity to provide shelter, and or was subject to intensive grazing and/or agricultural management. Hedgerows, scrub and tall ruderal at Park Farm and Fairfield Farm provided some opportunities for foraging, dispersing, sheltering and hibernating GCN albeit limited due their isolation and regular disturbance by livestock. Suitable woodland and scrub habitat, which forms part of a larger area of suitable habitat, was recorded at Drakelow Powerstation, however due to size of the habitat present within the Site and availability of optimal habitat in the wider landscape, it is expected that GCN will likely use suitable habitat within the wider area than within the Site itself.

4.3 The Site and a 500m buffer included twenty waterbodies. Eleven waterbodies were assessed for their suitability to support GCN breeding activity through a HSI survey, three were scoped out due to barriers to dispersal, four were scoped out as they were dry during the HSI survey and five were not surveyed due to access limitations. The HSI survey determined the following in terms of the suitability of waterbodies for GCN:

- **Good suitability**: Pond 1 and Pond 5.
- **Average suitability**: Pond 10, Ditch 3 and Ditch 4.
- **Below average suitability**: Pond 4 and Ditch 5.
- **Poor suitability**: Pond 8, Pond 9, Pond 11 and Ditch 1.

4.4 With the exception of Pond 8, which was not sampled due to safety concerns, and Pond 11 and Ditch 4 and 5, all of the ponds assessed in the HSI survey were subject to an eDNA survey. All ponds returned negative eDNA result, indicating that GCN were likely absent. This is supported by the findings of the GCN surveys at Oaklands Farm in 2020[1], which recorded no evidence of GCN within the nine ponds surveyed. Overall, the findings of the GCN surveys indicate that GCN are likely absent from the Site and therefore, are considered highly unlikely to

be affected by proposed development. As no adverse effects are predicted, there is no requirement for mitigation in relation to this species.

Mitigation

4.5 eDNA surveys indicate that there is a likely absence of GCN. Therefore, adverse impacts are considered extremely unlikely and no specific mitigation for this species is required.

Enhancement

4.6 Enhancement being provided by the Proposed Development which would benefit for amphibians generally, and which could encourage future colonisation of the Site by GCN, include:

- Relaxation of grassland management across the Site to allow a longer sward to develop. This would increase foraging and commuting opportunities.
- Creation of log piles and hibernaculum across the Site, including near retained ponds. This would provide hibernating and sheltering opportunities.
- Invasive species monitoring and removal.
- Given the cessation of intensive grazing across the Site, water quality within the on-site ponds is expected to increase as result of the Proposed Development.
- Creation of a series of ponds and swales adjacent to the unnamed watercourse corridor. This would increase foraging and commuting opportunities.
- Enhancement of ditches through planting of marginal vegetation and management will increase foraging and breeding opportunities for this species.

Appendix A
Policy and Legislation

A.1 Statutory nature conservation sites and protected species are a 'material consideration' in the UK planning process (DCLG 2019). Where planning permission is not required, for example on proposals for external repair to structures, consideration of protected species remains necessary given their protection under UK and EU law.

A.2 Natural England Standing Advice aims to support Local Planning Authorities decision making in respect of protected species (Natural England 2017). Standing advice is a material consideration in determining the outcome of applications, in the same way as any individual response received from Natural England following consultation.

A.3 The Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579) transpose the requirements of the European Habitats Directive (Council Directive 92/43/EEC) and Birds Directive (Council Directive 2009/147/EC) into UK law, enabling the designation of protected sites and species at a European level.

A.4 The Wildlife and Countryside Act 1981 (as amended) forms the key piece of UK legislation relating to the protection of habitats and species.

A.5 The Countryside Rights of Way Act 2000 provides additional support to the Wildlife and Countryside Act 1981; for example, increasing the level of protection for great crested newt.

A.6 The Wild Mammals (Protection) Act 1996 sets out the welfare framework in respect to wild mammals, prohibiting a range of activities that may cause unnecessary suffering.

A.7 The Natural Environment and Rural Communities Act (NERC Act) 2006 created Natural England and the Commission for Rural Communities and extended the biodiversity duty set out in the Countryside and Rights of Way Act (CROW Act) to public bodies and statuary undertakers to ensure due regard to the conservation of biodiversity.

A.8 The Protections of Badgers Act 1992 sets out the legislation relating to badgers.

A.9 The Hedgerows Regulations 1997 makes provision for the protection of important hedgerows in England and Wales.

A.10 Species and Habitats of Principal Importance for Conservation in England and Wales and priority habitats and species listed on the Lowland Derbyshire Biodiversity Action Plans (LBAP) are species which are targeted for conservation. The government has a duty to ensure that involved parties take reasonable practice steps to further the conservation of such species under Section 41 of the Natural Environment and Rural Communities Bill 2006. In addition, the Act places a biodiversity duty on public authorities who 'must, in exercising their functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (Section 40 [1]). Criteria for selection of national priority habitats and species in the UK include international threat and marked national decline.

A.11 The National Planning Policy Framework (2023) states (Section 15) that the planning system should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks; promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

A.12 It also states that local planning authorities should refuse planning on the following principles:

- If significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for.
- If development is on land within or outside a site of Special Scientific Interest (SSSI), and is likely to have an adverse effect on it (the exception being where the benefits of the development in the location proposed clearly outweigh its likely impact).
- If development results in the loss or deterioration of irreplaceable habitats, such as ancient woodland and ancient or veteran trees (unless there are wholly exceptional reasons and a suitable compensation strategy exists).

A.13 Additionally, the NPPF states that development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Great Crested Newt

A.14 GCN are listed on the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is an offence to deliberately kill, damage, take (Section 9(1)) GCN; to intentionally or recklessly disturb a GCN whilst it occupies a place of shelter or protection (Section 9(4)(b)); or to deliberately or recklessly damage, destroy or obstruct access to a place of shelter (Section 9(4)(c)). Given the strict nature of these offences, there is an obligation on the developer and owner of a site to consider the presence of GCN.

A.15 GCN are listed on the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579). Regulation 41 strengthens the protection of GCN under the 1981 Act against deliberate capture or killing (Regulation 41(1) (a)), deliberate disturbance (Regulation 41(1) (b)) and damage or destruction of a resting place (Regulation 41(1) (d)).

A.16 Development works that may cause killing or injury of GCN or that would result in the damage, loss or disturbance of a place of shelter would require a Natural England (NE) Mitigation Licence. Licensed works require evidence that the works entailing detrimental impacts are unavoidable, as well as appropriate mitigation, which may include seasonal constraints and provision of alternative habitat. A NE Mitigation Licence application can only be submitted on completion of surveys and receipt of planning consent. The application typically takes six weeks to process, after which mitigation could commence.

A.17 GCN are also listed on the UK BAP. Under the NERC Act, 2006 the Government has a duty to ensure that parties take reasonable practicable steps to further the conservation of this species.

Appendix B
Figures

B.1 Figure 6.10.1: Great Crested Newt Survey North

B.2 Figure 6.10.2: Great Crested Newt Survey South

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 6.10.1: Great Crested Newt (GCN) Survey North

Site boundary

LUC identified pond/ditch: eDNA survey completed

Yes

No

Note:
All LUC identified ponds and ditches sampled were negative for GCN

Pond 11
Ditch 4
Ditch 5
Ditch 3
Pond 9
Pond 10
Pond 8
Pond 7
Pond 5
Pond 4
Pond 3
Pond 1
Ditch 1
Pond 13
Pond 2
Pond 12
Ditch 2
Pond 6

0 250 500 m

Map scale 1:8,000 @ A3

PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 6.10.2: Great Crested Newt (GCN) Survey South

Site boundary

ARCUS identified waterbody: eDNA survey completed

Yes

No

Note:
All ARCUS identified ponds and ditches sampled were negative for GCN.
Data digitised from ARCUS Preliminary Ecological Appraisal Report (2020).

P1
P2
P3
P4
P5
P6
P7
P8
P9

0 250 500 m

Map scale 1:7,500 @ A3

PINS reference: EN010122

Appendix C

Habitat Suitability Index (HSI) Results

C.1 The Habitat Suitability Index (HSI) results are presented in **Table C.1,** shown overleaf.

Table C.1: Habitat Suitability Index (HSI) Results

SI Number	SI Description	Waterbody Reference										
		Pond 1	Pond 4	Pond 5	Pond 8	Pond 9	Pond 10	Pond 11	Ditch 1	Ditch 3	Ditch 4	Ditch 5
1	Geographic location	1	1	1	1	1	1	1	1	1	1	1
2	Pond area	0.6	0.7	1		0.92	0.2	0.8	0.05	0.95	0.1	0.2
3	Pond permanence	0.9	0.9	0.9	0.9	0.9	0.5	0.9	0.1	1	1	1
4	Water quality	1	0.33	0.67	0.01	1	0.67	0.33	0.33	0.67	1	0.33
5	Shade	1	0.2	1	1	1	1	1	1	0.2	0.4	0.3
6	Water fowl effect	0.67	1	0.67	0.01	0.01	1	0.01	1	1	1	0.67
7	Fish presence	0.67	1	0.67	0.67	0.33	1	0.67	1	1	0.67	1

SI Number	SI Description	Waterbody Reference										
		Pond 1	Pond 4	Pond 5	Pond 8	Pond 9	Pond 10	Pond 11	Ditch 1	Ditch 3	Ditch 4	Ditch 5
8	Pond Density	1	1	1	1	1	1	0.9	1	0.9	0.9	0.9
9	Terrestrial habitat	0.67	0.33	1	0.33	0.33	0.67	1	0.33	0.67	1	1
10	Macropyhyte cover	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HSI Score		0.74	0.58	0.78	0.30	0.44	0.65	0.46	0.69	0.42	0.61	0.57
Pond suitability		Good	Below average	Good	Poor	Poor	Average	Poor	Average	Poor	Average	Below average

Appendix D

eDNA Results

SureScreen Scientifics

Folio No: E9645
Report No: 1
Purchase Order: 11477
Client: LUC
Contact: Tom Hicks

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 25/04/2021
Date Reported: 07/05/2021
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1003	POND 5	SK23421840	Pass	Pass	Pass	Negative	0
3252	DITCH 3	SK23761918	Pass	Pass	Pass	Negative	0
3254	POND 9	SK23201887	Pass	Pass	Pass	Negative	0
3255	POND 4	SK24071838	Pass	Pass	Pass	Negative	0
3257	DITCH 1	SK23741810	Pass	Pass	Pass	Negative	0
3258	POND 1	SK2341818	Pass	Pass	Pass	Negative	0
3259	POND 10	SK23731894	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Chris Troth

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.