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Great Crested Newt Survey Report  
Padbury Brook Solar Farm, Bicester,  
Oxfordshire  
November 2022

A report by

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## Report details

Site name:	Padbury Brook Solar Farm
Site address:	Land near Stratton Audley, Cherwell, Oxfordshire, OX27 9BE
Grid reference:	SP623272
Survey dates:	11 <sup>th</sup> June 2022
Report date:	16 <sup>th</sup> November 2022
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Report no:	WOR-2672.GCN

## Declaration of compliance

### BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of Practice for Planning and Development.

### Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

## Validity of survey data and report

The findings of this report are valid for 24 months from the date of survey. If work has not commenced within this period, an updated survey by a suitably qualified ecologist will be required.

## Revisions

Date	Report no:	Approved by:	Comment
21/07/2022	WOR-2672.GCN	CDH	Original report
16/11/2022	WOR-2672.GCN.2	CDH	Updated report

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# 1. Introduction

Western Ecology has been commissioned to complete Great Crested Newt environmental DNA (eDNA) surveys of ponds associated with an area of agricultural land located close to Stratton Audley in Oxfordshire. Installation and operation of a 44MW Solar Farm together with infrastructure and battery storage is proposed.

## 1.1. Survey aims

The survey aim is to determine presence of Great Crested Newt (GCN) within suitable habitat contained within the site of the proposed development. This will allow an assessment of likely impact, and where appropriate, recommendations will be made for impact avoidance, mitigation and post-development enhancement to ensure compliance with wildlife legislation and relevant planning policy.

## 1.2. Site location

The site comprises an area of agricultural land located within a rural area. The village of Stratton Audley is located approximately 800m to the south west of the proposed development area, with the town of Bicester located approximately 3.7km to the south west (at the closest point).

## 2. Survey Methodology

### 2.1. Biological records search

The desktop survey from Thames Valley Environmental Records Centre provided biological records for GCN within 2 km of the site.<sup>1</sup>

### 2.2. Habitat suitability Index (HSI)

All accessible waterbodies within the site were evaluated for their potential to support Great Crested Newt by calculating a habitat suitability index (HSI) as per ARG UK Advice Note 5.

### 2.3. eDNA surveys

Water samples were taken from waterbodies that were considered to have sufficient suitability to support GCN, based on HSI score and professional judgement.

The eDNA survey was undertaken on 11<sup>th</sup> June 2022. Location of the ponds surveyed are detailed in Map 1. The survey visits were carried out within the optimum period of mid-April to late June and the samples were collected by a suitably experienced and licenced ecologist.

The eDNA sampling kits were supplied by SureScreen Scientifics and the survey methodology followed the Natural England protocol<sup>2</sup>.

For each water body, 20 samples of 30 ml each were collected from the edge of the waterbody by a suitably licenced and qualified ecologist. These samples were then mixed after which 15ml was withdrawn and added to each of six tubes containing a preservative. Six tubes from each waterbody were sent for analysis by SureScreen Scientifics.

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<sup>1</sup> Please see Preliminary Ecological Appraisal for additional detail

<sup>2</sup> 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. Defra Project WC1067. Freshwater Habitats Trust: Oxford.

### 3. Results

#### 3.1. Biological records search

The biological records search returned no records for Great Crested Newt within 2 km of the Site.

There are no statutory or non-statutory nature conservation site selected for Great Crested Newt within 2km.

#### 3.2. Habitat Suitability Index (HSI)

HSI scores were calculated for all of the 3 ponds within the Site (Ponds 1-3) see Map 1.

Great Crested Newt Habitat Suitability Index (HSI) has been calculated for all ponds based on ARG UK Advice Note 5. Details are contained within Table 1 below.

Table 1. HSI of ponds

Pond Number	HSI score and suitability	Comments
Pond 1	Dry	A heavily shaded basin, surrounded by Willow scrub, dried out with no water.
Pond 2	Dry	A very small pool at a ditch corner, heavily vegetated with soft vegetation (grasses etc) and holding no water.
Pond 3	0.49 – poor	A medium sized pond that is mostly dry, holding water in a very limited area and which supported 100% cover of duckweed. Basin surrounded by dense scrub and ruderal vegetation. No emergent or aquatic vegetation and heavily shaded. Unable to access water.

The HSI provides an indication of the likelihood of a pond supporting Great Crested Newt:

- Only 3% of ponds with ‘poor’ HSI scores are likely to be occupied by Great Crested Newt.
- Twenty percent of ponds with ‘below average’ scores are likely to be occupied by Great Crested Newt.
- More than half of ponds (55%) with ‘average’ scores are likely to be occupied by Great Crested Newt.
- Seventy-nine percent of ponds with ‘good’ scores are likely to be occupied by Great Crested Newt.

#### 3.3. eDNA surveys

eDNA surveys were not completed on any ponds within the Site as Ponds 1 & 2 were dry, while Pond 3 was mostly dry and the limited area of standing water that was present produced a ‘Poor’ HSI score.

### 3.4. Survey constraints

The surveys were completed in the period within which Natural England will accept DNA evidence to support a European Protected Species licence application.

Only ponds within the site boundary were surveyed; landowner permission was not obtained for ponds within 500m of the site but outside of the site boundary. The absence of GCN from suitable terrestrial habitat within the Site cannot be therefore determined.



**Legend**

Ponds surveyed

○ Dry

● No access



0 250 500 m

Title: Map 1. Pond survey plan

Project: Padbury Brook Solar Farm,  
Bicester, Oxfordshire

Checked by: CDH Version: 03  
Date: 16th November 2022



## 4. Legislation

Great Crested Newt and their breeding sites and resting places (during all parts of their lifecycle), are fully protected under the Wildlife and Countryside Act 1981 (as amended), and The Conservation of Habitats and Species Regulations 2017. They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb or injure Great Crested Newts (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care);
- possess, sell, control or transport live or dead newts, or parts of them; or
- take Great Crested Newt eggs.

Great Crested Newt are listed as a species of Principal Importance for the conservation of biodiversity.

Any development activities which could result in the accidental killing, injury or disturbance of GCN may constitute an offence under the Habitats Regulations.

Natural England may issue a licence to permit activities that would otherwise give rise to an offence under the Regulations. A European Protected Species Licence (EPSL) can be issued for a number of purposes, including “imperative reasons of overriding public interest” (known as IROPI), which covers development activities affecting GCN. Licences can only be issued where there is (a) no satisfactory alternative and (b) the action authorised will not adversely affect the favourable conservation status of the species.

## 5. Habitat assessment

Although no ponds will be lost to the development, there is potential for GCN to use the terrestrial habitats within the Site for foraging, commuting and for hibernation purposes.

Typically, GCN use habitats with plentiful cover and a supply of invertebrates for foraging; these could include, for example, tussocky grassland, scrub and woodland. Habitats that provide sufficient vegetative cover will also be used for commuting, such as rough grassland, scrub and hedgerows, while they will typically avoid crossing extensive areas of bare ground or areas with little cover, such as closely managed grassland. They may shelter and hibernate within the root systems of hedgerow shrubs and trees, under fallen branches/logs, within mammal burrows (including rabbit holes) and in banks, earth bunds and rubble piles.

The following observations are made on the suitability of terrestrial habitats within the proposed development site:

- The arable habitat that accounts for the majority of the Site provides suboptimal terrestrial habitat due to lack of sufficient vegetative structure of monoculture cereal crops and lack of associated foraging opportunities. Arable land use represents a dynamic process and will also frequently involve bare ground which GCN would avoid.
- Hedgerows and ditch habitat along field boundaries will provide nocturnal foraging opportunities, daytime resting habitat, and connectivity across the Site and to off-site habitats.
- The fragmented areas of scrub associated with field corners and hedgerows are likely to provide nocturnal foraging opportunities and day-time resting places.
- Root systems associated with hedgerows, mature trees and scrub which occur along field boundaries will also provide hibernation habitat.

The three ponds located within the Site were dry at the time of survey which suggests that the Site is unlikely to support a breeding population of GCN.

There are 2 ponds located approximately 50m to the north of the Site boundary and which feature connectivity to the Site (Ponds A & B – see Map 1). However, the client was not able to obtain landowner permission to access these to undertake eDNA surveys and there remains an unknown potential for these habitats to support GCN populations.

Adopting a precautionary approach, and assuming that Ponds A & B support GCN populations, there is a reasonable likelihood for GCN to use some of the suitable terrestrial habitat (such as hedgerows, scrub and ditches) contained within the Site for foraging, commuting and sheltering (including hibernation).

## 6. Recommendations for mitigation strategy

It has not been possible to rule out GCN presence from terrestrial habitats contained within this Site. Given this uncertainty, the risk of the proposed development impacting GCN in a way that may be considered an offence cannot be determined.

It is therefore recommended that a precautionary approach is followed, by which the development should join the NatureSpace Partnership led licensing scheme for Oxfordshire. This will ensure that any potential impacts to GCN are adequately mitigated.