

Project Profile

Solar Site, Swansea: eDNA Survey for Great Crested Newts

Background

BSG Ecology was instructed by Juno Energy to undertake an ecological survey and assessment of a small afforested site near Swansea.

The proposal concerned the development of a 1 MW photovoltaic array within an area of commercial forestry (grown to supply Christmas trees) and fringing grassland. Next to the site were four large ponds set in pasture land.

BSG Ecology's Role in the Project

BSG Ecology initially contacted the South East Wales Biodiversity Records Centre (SEWBREC) for ecological information relating to the site and surrounding area, and reviewed a variety of public domain information (including aerial photographs), before conducting an extended Phase 1 habitat survey based on industry standard methods. The survey work incorporated a Habitat Suitability Assessment (HSI) for great crested newts: this involves assessing the physical features and characteristics of ponds and deriving a suitability score (between 0 and 1, with 1 being the most suitable) for great crested newts.

The HSI scores for the four ponds, the closest of which was less than 10m from the site boundary, were all either excellent (three had scores of 0.82-0.90) or good (one with a score of 0.71). Notwithstanding this, we knew from previous experience that great crested newts have a very scattered distribution in the Swansea area, being principally found in west Gower and in former industrial areas to the east of the city. These populations are discrete, widely separated and remote from the site, and there are no recent, reliable records from elsewhere within the City and County that were known to the local authority ecologist. Despite this, there is also no robust data indicating great crested newts are absent from ponds away from these core areas.

As great crested newts are a European Protected Species, the animals, their eggs, breeding sites and resting places are protected by law. The fringes of the site, which included hedge banks and a compost heap, were considered to potentially provide good terrestrial habitat for newts. It was therefore important that the status of great crested newts within the ponds was understood, to ensure that the species was appropriately taken into account.

We therefore advised, following discussion with the client, that an eDNA sampling exercise was completed using industry standard methods. This would still allow the time for more conventional presence or absence survey work to be undertaken, should the results be positive. It represented a calculated risk, as conventional survey, involving four to six visits, is considerably more expensive. In the event that a positive result was returned, the six visits would still have needed to be undertaken to inform a population estimate, which is necessary for a newt (mitigation) license application. However, the scarcity of newts at the local level convinced the client that this risk was worthwhile.

The Outcome

No evidence of great crested newt eDNA was found in the samples submitted for laboratory testing from the four ponds. This indicated the likely absence of great crested newts.

The results of the sampling were returned very quickly, and the approach and outcome were detailed in a simple report that was appended to the main ecology report for the site. As a result, the developer was able to submit the planning application quickly, and in the knowledge that it was supported by robust ecological information.

Although the approach did involve taking a calculated risk (as a positive result would have necessitated a 6 visit survey and extra expense), it was considered very likely that great crested newts would be absent based on the best available information. The result therefore saved time and financial outlay for the client.

eDNA survey is often undertaken on sites where there is a long lead in to the planning application (i.e. where the eDNA work can be completed in one year and the survey work (if necessary) in a second season), or to inform the scope of survey work on large sites where numerous ponds may be affected by development. This project shows that there is also scope for the use of eDNA survey around the edges of the range of great crested newt.

The scheme will see the retention and enhancement of existing semi-natural boundary features and the creation of a new hedge, and is likely to result in local conservation gain. The ponds will not be directly affected by the works.