

IMPERIAL PARK CABLE ROUTE

Otter, Water Vole and Great Crested Newt Survey



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OTTER, WATER VOLE AND GREAT CRESTED NEWT

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1 INTRODUCTION

1.1 Purpose and Scope of this Report

- 1.1.1 RPS Consulting were commissioned by SSE Energy Solutions ('SSE') to undertake a series of ecological surveys of a site on land to the south of Imperial Park in Dyffryn, Newport. The surveys were undertaken to ascertain the presence or likely absence of otter *Lutra lutra*, water vole *Arvicola amphibius* and great crested newt *Triturus cristatus*.
- 1.1.2 SSE is seeking to install a series of cables (below ground) between the existing National Grid Imperial Park Substation site and a proposed data centre switchroom west of Celtic Way. Trenching and cable laying activities needed to facilitate the installation and energising of the cable route are hereafter referred to as the 'Proposed Development'. The Proposed Development's planning application boundary, and the cable route corridor is illustrated by the red line on Figure 1, hereafter referred to as the 'Site'.
- 1.1.3 This report presents the findings of the ecological surveys and assessments that have been undertaken in support of the Proposed Development. Features surveyed and the survey findings are illustrated on Figure 2. All ecological surveys and assessments have targeted watercourses, waterbodies (where accessible), and ditches within 100m of the Proposed Development as well as suitable terrestrial habitat.
- 1.1.4 An assessment of the value of the Site for each of the species' groups surveyed is outlined in this report. Outline recommendations, specifically for construction of the Proposed Development are provided within this report. Impacts and potential effects on the species for which the surveys have been undertaken are set out within the Preliminary Ecological Appraisal Report (RPS, 2025^a).

1.2 Site and Project Description

- 1.2.1 The Site is located to the south of the Imperial Park industrial area, located at the west of Newport, South Wales. The Site is approximately centred on Ordnance Survey Grid Reference ST 282 838. The Site comprises a linear corridor devised for the siting of 11 kV and 132 kV cables from a proposed datacentre at the former Quinn Radiator site (with planning reference 24/0006) to the existing National Grid 400kV Electricity Substation, at Celtic Lakes. The red line terminates at the west of the of the above substation site, which forms part of a proposed new Gas Insulated Substation (with planning reference 25/0520).
- 1.2.2 The Site encompasses a hard standing public footpath and cycleway forming the active travel section of an abandoned unadopted highway, now colloquially referred to as the 'Road to Nature'. The northern section of the Site, just off the proposed datacentre now falls within a live construction site (planning reference 24/0006), though in February 2025 the area was hardstanding, short-perennial grassland and scrub. The south eastern section of the Site, between the end of the 'Road to Nature' and the National Grid Electricity Substation comprised standing water ditches, marginal vegetation, neutral grassland, bare ground and disturbed short-perennial vegetation along with the Road to Nature highway, cycle path and roundabout. Areas of mixed plantation woodland, dense and scattered scrub and reedbed habitats were present in the wider Imperial Park area, with arable fields further to the south. The Site is under the ownership of Newport City Council.
- 1.2.3 The Proposed Development comprises the installation of two 11kV and two 132kV cables and associated joint bays within an estimated cable corridor of just over 2km. To facilitate the laying of the cables, open cut trenching will be implemented for most of the cable route corridor length. An estimated 180 m section of the corridor will be subject to horizontal directional drilling (HDD), to avoid adverse effects on the ditch network that forms part of the Gwent Levels Site of Special

Scientific Interest (SSSI). The Proposed Development design (at the current stage is in Appendix A).

- 1.2.4 Full design information of the Proposed Development is not available at the current stage but it is anticipated that construction would take up to 6 months to complete. The easement required for the cable route is estimated to be 6m (just over 3m either side of the cable corridor). Joint bays require 5 m either side of the cable corridor and are intermittent along the cable corridor. HDD entrance and exit pits are estimated to be 20 m x 40 m (as a worst case). All trenching, joint bays and HDD pits would be temporary in nature, with vegetative areas reinstated following completion of construction, with existing material (where appropriate) and enhanced planting proposals. Night time working is not anticipated as part of construction.

1.3 Legislation and Policy

- 1.3.1 Relevant legislation, policy and guidance are referred to in this report where appropriate. The relevant legislation, policy and guidance are set out below.:

- 1.3.2 Otter and their habitats are fully protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (as amended) and Section 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offense to:

- capture, injure or kill an otter;
- harass an otter or group of otters;
- disturb an otter in a holt or any other structure or place it uses for shelter or protection;
- disturb an otter while it is rearing or otherwise caring for its young;
- obstruct access to a holt or other structure or place otters use for shelter or protection or to otherwise deny the animal use of that place;
- disturb an otter in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species;
- disturb an otter in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- damage or destroy a breeding site or resting place of such an animal (note that this does not need to be deliberate or reckless to constitute an offence); and
- keep, transport, sell or exchange or offer for sale or exchange any wild otter or any part or derivative of one (if obtained after 10 June 1994).

- 1.3.3 Water voles and their breeding/sheltering places are protected under the Wildlife and Countryside Act 1981 (as amended). Under this legislation, water voles are protected against:

- intentional killing, capture or injury;
- intentional or reckless destruction of a shelter/structure that a water vole is occupying; and
- intentional or reckless disturbance, obstruction, damage or destruction to their burrows or places of shelter (places of shelter includes burrow systems/networks and nests within or nearby burrows, usually within dense vegetation).

- 1.3.4 Otter and water voles are listed as Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016. This legislation requires the conservation of their habitats to be given consideration in planning decisions.

- 1.3.5 Great crested newt is fully protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offense to:

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- Intentionally kill, injure or take a great crested newt;
 - Possess or control a live or dead great crested newt or any part thereof;
 - Intentionally or recklessly damage, destroy, or obstruct access to any structure or place used for shelter, breeding or protection;
 - Intentionally or recklessly disturb great crested newt while they occupy such place; and
 - Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.

1.3.6 Great crested newt is listed as a Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016. This legislation requires the conservation of great crested newt and their habitats to be given consideration in planning decisions.

1.4 Ecological Background

1.4.1 Multiple surveys have been undertaken to support the Proposed Development, and the associated Gas Insulated Substation (GIS) proposal (proposed within the existing National Grid Electricity Substation site). Three habitat surveys have been undertaken within and in proximity to the Site since January 2025 (RPS, 2025^{a,b}).

1.4.2 Additionally, tree surveys to support an Arboricultural Impact Assessment (AIA) have also been undertaken (RPS, 2025^c).

1.4.3 Surveys of the wider Imperial Park area have also been undertaken by Ove Arup and Partners (2023) and Ecus (2021) as part of the Celtic Lakes NGED Substation development (planning reference 23/0878).

2 METHODS

- 2.1.1 This section presents the methodologies used to conduct the targeted ecological surveys which were undertaken within suitable habitats within the Survey Area.

2.2 Otter and Water Vole Survey

- 2.2.1 Two walkover surveys to ascertain the presence or likely absence of otter and water vole were undertaken in 2025. The first was on the 11th of June 2025 and the second was on the 7th August 2025. These surveys were undertaken to search for signs and evidence of otter and water vole and were undertaken by suitably competent ecologists with experience of undertaken surveys for riparian mammals.

- 2.2.2 The otter and water vole surveys were conducted concurrently.

Otter

- 2.2.3 The survey targeted suitable terrestrial and aquatic habitats (where accessible). Aquatic features were targeted where they were located within 100m of the Proposed Development, principally within proximity to cable route. Where ditches bisected the Proposed Development, they were searched for up to 300m of their length (where accessible). This approach was adapted from the Otter Survey of Wales methodology (Kean and Chadwick, 2021).

- 2.2.4 Searches were made for field signs of otter following the methods described in Bang and Dahlstrøm (2001) and Chanin (2003). Each watercourse was searched, included their banksides and adjoining terrestrial.

- 2.2.5 Watercourse banksides, rocks and tree roots were inspected for field signs indicative of otter presence, which included:

- **Spraints**- otter droppings often deposited at key features to indicating territories, such as elevated points in or beside watercourses and waterbodies (rocks, logs, large tufts of vegetation) and regularly used entry and exit points in the water;
- **Footprints**- left in soft ground and very distinctive to otter;
- **Paths/slides**- paths associated with ditch crossings or entry and exit points into bankside vegetation or the water; and
- **Feeding remains**- leftover remains of an otter's prey such as fish bones, crab exoskeletons etc.

- 2.2.6 The surveyors systematically searched for any field signs of otter activity. The banks of all the watercourses were searched for evidence of mammal runs and slides that could have been created by otters entering or leaving watercourses.

- 2.2.7 Searches were made for otter spraints on stones features including stones and logs within and on the sides of the small watercourses. All areas of soft ground (mud/wet sand) were inspected for otter prints.

- 2.2.8 A search for suitable features that had potential to be used as resting places and/or natal dens also formed part of the walkover. Features such as large holes (or tunnels) in the banksides, cavities beneath the root-Photographs of large trees and any person-made structures such as drainage pipes or culverts were inspected. The survey also included a search for potential above-ground resting places which can sometimes consist of no more than an area of flattened grass or earth. All aquatic habitats included as part of the survey are illustrated on Figure 2.

- 2.2.9 An overall assessment was made of the potential for terrestrial habitats to be used by otter as a place of shelter based on their structure and context. The presence/absence of associated field signs also informed the likelihood of use by otter.

Remote Camera Deployment

- 2.2.10 Motion sensing infra-red cameras were deployed in two locations alongside aquatic features to record for potential signs of otter activity.
- 2.2.11 Two camera traps were deployed within strategic locations along suitable aquatic features on the 11th June, these remained on Site for a period of two weeks before being collected in and the footage analysed for otter activity. The locations of these camera traps can be seen on Figure 2.

Water Vole

- 2.2.12 All accessible ditches and reens within 10m of the Site were systematically surveyed in June and August 2025.
- 2.2.13 The surveyors walked along the top of the banksides of the wet ditches/reens to check for water vole signs.
- 2.2.14 The banksides of aquatic features were inspected for field signs indicative of water vole presence, which included:
- **Latrines** larger compacted piles of old and decomposing to fresh droppings where they have been continually used which mark water vole territory boundaries;
 - **Runways** distinct pathways in bankside vegetation and in mud alongside the water course caused by frequent and repeated use;
 - **Burrows** within the bank face above and below the water level and on the bank top;
 - **Footprints** these may be visible on soft mud particularly along the edge of the water and beneath overhanging vegetation'
 - **Tracks and burrows** paths associated with ditch crossings or entry and exit points into bankside vegetation or the water; and
 - **Feeding stations** piles of vegetation (often with droppings) where water voles have been feeding.
- 2.2.15 The level of bankside and in-channel vegetation was noted, along with the level of shading, steepness and substrate of the banks. The overall suitability of the habitat for water vole was also noted.

2.3 Great Crested Newt

- 2.3.1 The network of wet ditches within and in proximity to the Site were sampled for great crested newt environmental DNA (eDNA). Areas along Percoed Reen, and its connecting ditch network were sampled alongside the otter and water vole survey on 11th June 2025 in accordance with the methodology described in Briggs et al., 2014. Samples were taken across the ditch network given their connectivity.
- 2.3.2 Surveyors collected 30 (millilitres) ml water samples from 20 locations along the margins of the ditches and surveyed, using a sterile ladle. Surveyors collected the sample from points evenly spaced along the waterbody, to ensure a representative sample was collected and to ensure the effectiveness of the survey was not compromised.
- 2.3.3 The surveyors used the ladle to gently agitate the water to mix the water column, whilst taking care not to disturb and collect any sediment. The twenty samples collected from the waterbody were emptied into a sterile plastic bag and homogenised by gently shaking the bag to ensure eDNA was evenly mixed through the sample.
- 2.3.4 A pipette was used to collect six 15ml subsamples of the waterbody from the bag into sterile tubes that already contained 35ml of ethanol, used to preserve the eDNA sample.

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- 2.3.5 The samples were then sent to SureScreen Scientifics for analysis. The water samples were analysed using a quantitative Polymerase Chain Reaction (qPCR) eDNA test.

2.4 Notes and Limitations

Otter and Water Vole

- 2.4.1 During the first otter and water vole walkover survey there were several sections of dense vegetation along the banks of the reens to the north of the Site which significantly restricted visibility, limiting the ability to thoroughly inspect the bank margins for water vole. As a result, it is possible that some evidence or signs of presence may have been missed due to bankside visibility constraints. To reduce this limitation, areas that could not be searched fully in June were searched in August with in-channel surveys conducted.
- 2.4.2 Due to the steepness and height of some of the banksides (specifically parts of the Nant-y-Moor Reen), where areas could not be surveyed safely, surveyors checked the base of the banks from the opposite side of the reens using close-focusing binoculars. To reduce limitations associated with dense vegetation obscuring bankside habitats motion-sensing cameras were deployed in two areas along the reens to monitor otter and water vole activity.
- 2.4.3 There were three ponds located within 500 m of the Site, which were largely inaccessible due to the dense scrub and bramble around the pond banksides. Two ponds were completely inaccessible, and only a small section of the third pond could be accessed. Although access was restricted it is assumed that both otter and water vole could use these features and are assumed present.
- 2.4.4 These ponds were located more than 100m from the Site and are not expected to be disturbed. The restricted access to these areas is not expected to impact or influence avoidance and mitigation measures designed for the Proposed Development..

Great Crested Newt

- 2.4.5 Sampling for great crested newt eDNA was undertaken where waterbodies could be accessed. These accessible areas included Percoed Reen and the ditch network north and south of the Site, only. The ponds were not surveyed due to restrictions on accessing the banksides and ability of obtaining samples during the period required to survey for great crested newt. Whilst no data was collected for the three ponds, they were located more than 100 m from the Proposed Development and are not expected to be disturbed. Moreover, previous great crested newt surveys undertaken for the Celtic Lakes NGED Substation development (Ecus, 2021) recorded an absence of great crested newt from several other ponds further to the north east of the Site.
- 2.4.6 With confirmed absence from previous ecological baseline data, lack of records from SEWBRcC and the confirmed absence from survey findings presented in this report for the Proposed Development, the access restrictions are not expected to impact the outcome of the assessment made in the Preliminary Ecological Appraisal. Measures to safeguard amphibians have been recommended as a precaution.

Accurate Lifespan of Ecological Data

- 2.4.7 Most ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for 18 months to two years as per best practice guidance (CIEEM, 2019), assuming no significant considerable changes to the site conditions.

3 RESULTS

3.1 Desk Study Records

- 3.1.1 Records obtained from SEWBRc as part of the PEA (RPS, 2025^b) identified records of otter within 2km of the Site, within the last 10 years. A total of four records of otter were returned with the closest being within 570m of the Site, in 2023.
- 3.1.2 SEWBRc provided six records of water vole within 2km of the Site, the most recent record was from 2023, recorded 50m to the south east of the Site. This was a record from within Percoed Reen.
- 3.1.3 No great crested newt records were noted within 2km of the Site in the last 10 years.

3.2 Habitat Suitability Overview

- 3.2.1 There were a range of suitable habitats for otter within the Site and the wider Imperial Park area. The most suitable habitats being located within the northern and southern sections of the Nant-y-Moor Reen. This included its channel and surrounding scrub thickets. Foraging and commuting opportunities, and areas suitable for the creation of resting places and natal dens were present within and alongside Nant-y-Moor Reen, within the scrub thickets and the plantation woodland. Percoed Reen and ditches to the north also provided suitable features for otter, which were largely restricted to commuting and foraging. Opportunities for the creation of resting places (particularly those below ground or within cavities) were restricted given the scattered nature of the bankside vegetation and lack of continuous dense bankside vegetation cover.
- 3.2.2 The wider Imperial Park area includes a network of ditches and reens, which are both flowing and stagnant. This includes Percoed Reen and its connected ditches (in the east of the Site), and Nant-y-Moor Reen (to the north of the Site). The reens within the Site, particularly those within the HDD section offered the most opportunities for water vole. The banksides were unobstructed, and several ditches offered the appropriate gradient for the creation of burrows. Grasses and rushes along Percoed Reen and within the ditch network to the north of the Site provided adequate food sources in areas that could offer safeguarded feeding stations. The Nant-y-Moor Reen was less suitable given the presence of heavily shaded bankside vegetation in the form of trees and shrubs for most of its length. In August 2025, several areas of Nant-y-Moor Reen were covered by a layer of common duckweed *Lemna minor*, reducing its suitability for otter. Common duckweed is less of an obstacle for water vole, which may form a relatively small part of its diet.
- 3.2.3 Great crested newt aquatic habitat was present within 250 m of the Site, in the form of three waterbodies and the ditch network. Water flow was recorded within Percoed Reen in June 2025, which may provide a barrier to amphibian dispersal at different times of the year depending on flow rate. Short grassland, scrub mosaics and marshy grassland areas could offer commuting opportunities for great crested newt and other amphibians.

3.3 Otter

Nant-y-Moor Reen

- 3.3.1 The reen was approximately 2m wide, water clarity was mostly clear with the watercourse substrate being visible and consisting of a mixture of bedrock and stone fragments, with depths ranging from 0.2m to 1m.
- 3.3.2 The northern section of the reen was heavily vegetated and difficult to access pictured in Appendix A (Photographs 1, 28 and 29). A trail camera was deployed to monitor activity along the northern section of the reen.

- 3.3.3 The banksides of the reen in the northern section had suitable terrestrial habitat to support otter, which included over hanging tree roots and dense scrub. The banksides frequently formed shelves approximately 1 m wide before rising up steeply to ground level. Much of Nant-y-Moor Reen was heavily shaded, with a mix of riparian vegetation providing adequate cover and potential areas for the creation of resting places. Intermittent sections were open, allowing light to penetrate.
- 3.3.4 The reen was culverted underneath the Road to Nature, with different vegetation heights recorded to the north and south of the culvert. The vegetation structure to the north of the culvert was slightly different to the northern reaches of the reen, with unshaded banksides dominated by common reed *Phragmites australis* and bramble scrub (Appendix A, Photograph 6). The vegetation south of the culvert remained dense with common reed covering most of the channel. Bramble and rosebay willowherb also formed part of the dense vegetation. The culvert and vegetation can be seen in Appendix A, Photographs 7 and 8 respectively. This vegetation offered areas for the creation of resting places, though no obvious evidence was recorded.
- 3.3.5 The reen then passed through an area of broadleaved plantation woodland (Photograph 9 & 10). The banksides were densely vegetated with a combination of bramble, hemlock water-dropwort and butterbur. Water depth was approximately 0.5 to 1 m, and the water was more turbid than in the northern section. A footbridge was recorded crossing the reen, which had otter spraint and a possible resting place (cough or laying up site) below. The spraint and compressed / bare vegetation confirmed presence and indicated likely use for both marking territory and as a temporary resting place (Appendix A, Photograph 11). As this spraint and potential resting place was below a footbridge, it is unlikely to be used for anything other than a temporary resting place.
- 3.3.6 Overall, Nant-y-Moor Reen and its adjoining terrestrial habitat specifically south and north of the Site provided the necessary opportunities for commuting. Foraging is likely to be seasonal given the fluctuations in water depth and sub-optimal conditions created by common duckweed. Nant-y-Moor Reen and the surrounding habitat is unlikely to be used for raising young.

Percoed Reen

- 3.3.7 The section of Percoed Reen south of the Site measured approximately 1.5m to 2m wide with a water depth between 0.5m and 1.2m in June. Water levels were closer to 0.5m in August. The water clarity was clear during the first survey visit in June. Aquatic vegetation comprises mostly arrowhead and common reed, with the reen bed was visible along most of its length.
- 3.3.8 The banksides were predominantly vegetated with common reed, intermittent hemlock water-dropwort, soft and hard rush with scattered purple loose strife. Percoed Reen was mostly open, with canopy cover only noted at the intersection between the Road to Nature and Green Lane. Whilst the reen offered commuting opportunities for otter, the creation of resting places was limited given its reduced cover. Disturbance from users of Green Lane may also deter otters from creating resting places within or in proximity to Percoed Reen. Whilst no fish were recorded in the channel during either of the surveys, it is likely the reen does support the typical prey items needed as part of an otter's diet.

Wet Ditch Network (off Percoed Reen)

- 3.3.9 The aquatic features within the HDD section of the Site, and to the north and south consisted of a network of wet ditches that connected into to Percoed Reen. The ditches varied greatly in their channel width, with most measuring between 1.5m to 2m wide. Parts of the westernmost and easternmost ditch narrowed to a width of 0.5m. Water depth within the channels were between 0.5m and 1.2 m in June 2025, with water levels reduced to 0.5 m in August 2025, and dry in some areas of the network (Appendix A, Photograph 27). The water was noted to be mostly clear with the ditch bed visible throughout the majority of the ditch network. In August, algae had begun to form in the easternmost ditch and common duckweed and covered areas connecting into Percoed Reen.

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- 3.3.10 Several sections of the ditch network were free from in-channel vegetation (Appendix A, Photograph 18), though bankside vegetation (primarily common reed and hemlock water-dropwort) had begun to encroach over the channel. Bankside vegetation consisted mainly of common reed, with bramble starting to encroach (Appendix A, Photograph 13 & 14). Areas hidden by bramble and willow scrub, mostly north of the Site offered suitable areas for laying up, with water levels in June providing enough water to sustain prey items. Though foraging opportunities within the ditch network are likely to be seasonal given the fluctuating water levels.

Ponds

- 3.3.11 Although most of the ponds within the wider Imperial Park area were inaccessible, one pond could be partially accessed and was surveyed where accessible. The pond was heavily shaded on its southern side with steeper banks. The eastern bankside was flat, and common reed was present along much of the pond's perimeter (Photograph 19). Spraint was recorded on the southern side of the pond, indicating use by otter.

Otter Field Signs

- 3.3.12 Otter spraint was recorded in three locations adjacent to aquatic features. The locations of which are illustrated on Figure 2. The first field sign was seen recorded in the northern section of Nant-y-Moor Reen. The second was recorded along the edge of the westernmost pond, north of Nant-y-Moor Reen. The third spraint was noted along the southern section of Nant-y-Moor Reen to the south of the Site, underneath a footbridge.
- 3.3.13 The camera traps recorded no otter activity in the two-week period they were deployed. Incidental recordings of fox *Vulpes vulpes*, brown rat *Rattus norvegicus* and a blackbird *Turdus merula* were identified on camera trap 1. Whilst no activity was recorded, otter field signs confirmed presence along Nant-y-Moor Reen. No activity was recorded on camera trap 2.

3.4 Water vole

Nant-y-Moor Reen

- 3.4.1 The northern section of Nant-y-Moor Reen offered reduced suitability for water vole given its heavily shaded banksides, though there were bankside areas above the waterline that could be used for burrowing by opportunistic water voles (Photograph 2 & 28). Herbaceous vegetation suitable for water vole foraging was present along select parts of the reen, but was scattered due to the continuous shade.
- 3.4.2 The midsection of the reen, north of the culvert was heavily vegetated by bramble, common reed and intermittent young willow, almost exclusively covering the channel (Appendix A, Photograph 6). The reen banksides in this location were disturbed slightly given the culvert, with bramble covering most of the banksides. This made the central section of the reen less suitable for water vole, particularly for foraging, though water vole may make use of the central section for temporary cover.
- 3.4.3 The southern section of the reen, within the woodland comprised densely vegetated banksides (Appendix A, Photograph 7 and 8) though intermittent sections were open, offering water voles the opportunity to feed along the water edge. The channel was open and mostly free from vegetation in June, providing water voles the opportunity to commute through the channel. Flatter areas, near the footbridge provided additional areas for water voles to use as feeding stations along the waterline. The southern section of Nant-y-moor Reen was noted to have steeper banksides above the water line which offered suitable areas for the creation of burrows. The riparian vegetation was dense and varied in heights, offering adequate cover.
- 3.4.4 In August, the woodland section of Nant-y-Moor Reen was covered in a layer of common duckweed. Whilst this may reduce biological conditions in the channel, it is unlikely to be present a

barrier to the channel's use by water vole individuals. No in-water trails were recorded within the duckweed layer in August.

Percoed Reen

- 3.4.5 Percoed Reen offered optimal conditions for water vole, with suitable bankside substrate offering burrowing opportunities, and adequate vegetation cover providing safe feeding station locations. Arrowhead was abundant as in-channel vegetation offering adequate cover when commuting.
- 3.4.6 Some areas of Percoed Reen were becoming choked by common reed, specifically in the west, though bankside areas remained largely open and accessible for most of the reen's length.

Wet Ditch Network

- 3.4.7 The four ditches that connect to Percoed Reen were of sufficient size to support water vole, each measuring approximately 1.5 m to 2m wide with a water depth between 0.5m and 1.2m at the time of the survey visits. The water was clear with the bed visible throughout the network.
- 3.4.8 The ditches running to the north of Percoed Reen supported an optimal vegetation structure for providing shelter, whilst offering a diversity of herbaceous plants for foraging. Grasses and other herbaceous vegetation (Appendix A, Photographs 15, 23 and 24) including fruit offered by bramble lower down provided the necessary conditions to sustain the local water vole population.
- 3.4.9 The reens in this area are well connected supporting commuting and dispersal between habitat patches. The bankside substrate offered suitability for burrow creation, particularly in the northern sections of the westernmost and easternmost ditches where water levels would not lead to burrow flooding.
- 3.4.10 The northern limits of the easternmost ditch had become heavily scrubbed over, with bramble, willow and common reed covering a 40-50m stretch of the ditch, shading it completely.

Ponds

- 3.4.11 The pond north of Nant-y-Moor Reen (Appendix A, Photograph 19) appeared to offer flatter bankside sections that could be used as a feeding station by water voles. Whilst the southern section was heavily vegetated by trees and shrubs, certain parts of the pond may be inhabited by water vole from time to time as they move through the wider Imperial Park area. As banksides could not be accessed, evidence of burrows could not be confirmed.

Water Vole Field Signs

- 3.4.12 Water vole footprints were recorded within Percoed Reen during a habitat survey as part of the PEA (RPS, 2025^a). Water vole droppings were recorded along the bank within the southern section of Nant-y-moor Reen during the first survey on the 11th of June 2025, the location of the droppings can be seen on Figure 2. No evidence of water vole burrows were noted during either of the surveys. No evidence of water vole was recorded on footage captured on camera trap 2.

3.5 Great Crested Newt

- 3.5.1 The terrestrial habitat within 250m of the wet ditch network and ponds provided suitable foraging and refuge opportunities for great crested newt. The habitat was well connected with areas of cover, and alternating topography to enable access and egress into the ditches. The ditch network was mostly stagnant, providing conditions for amphibians to move through without resistance, though macrophyte cover suitable for egg laying was limited.
- 3.5.2 The laboratory analysis of the great crested newt eDNA samples returned negative results for Percoed Reen and the wet ditch network, indicating that great crested newt was likely absent at the time of sampling.
- 3.5.3 The laboratory results for SureScreen Scientifics are presented in Appendix B.

4 CONCLUSIONS AND RECOMENDATIONS

- 4.1.1 Implications for the Proposed Development and an assessment of the likely impacts and effects on the species discussed in this report are set out in the PEA (RPS, 2025^b).

4.2 Otter

- 4.2.1 The survey results confirmed presence of otter within Nant-y-Moor Reen. The survey also confirmed suitable aquatic and terrestrial habitat for otter, which included reens, ditches and dense scrub thickets. Whilst no signs or evidence were recorded within the Site, results indicate that otter individuals travel along the Nant-y-Moor Reen given the presence of spraint in the north and south. Implications for the Proposed Development as a result of the survey findings are set out within the PEA (RPS, 2025^a). Recommendations for otter are set out below.

4.3 Water vole

- 4.3.1 The survey results confirmed the presence of water vole within Nant-y-Moor Reen. Whilst no signs or evidence were recorded within the Site, results indicate that water vole is likely commuting and foraging along Nant-y-Moor Reen, Percoed Reen and the ditch network which crosses the Site. Whilst no burrows were recorded during the survey, it is likely that burrows are present in the wider Gwent Levels area. Burrows may also be created within the banksides at a later stage. Implications for the Proposed Development as a result of the survey findings are set out within the PEA (RPS, 2025^a). Recommendations for water vole are set out below.

4.4 Great Crested Newt

- 4.4.1 The survey results confirmed absence of great crested newt from within the ditch network and Percoed Reen. Absence cannot be confirmed within the ponds in the wider Imperial Park area, however, with likely absence confirmed within the ditch network during 2025 eDNA sampling, combined with a lack of records returned from the desk study and previous survey work confirming absence (Ecus, 2021) in several northern ponds, it is likely that great crested newt is absent from the Site and surrounding area. Nevertheless, precautionary measures for amphibians are set out below.

4.5 Avoidance, Mitigation and Enhancement Measures

- 4.5.1 A Construction Environmental Management Plan (CEMP) should be implemented during the construction phase, with environmental best practice measures in place to reduce pollution run off and reduce other potential negative environmental impacts to terrestrial and aquatic habitat within the working area.
- 4.5.2 A preconstruction ecological walkover should be conducted of all aquatic habitats within the Site and up to 100m of the Site, and their adjoining terrestrial habitat, particularly Nant-y-Moor Reen to ascertain if otter resting places or natal dens are present in proximity to the Site. Similarly, the preconstruction walkover would also search for water vole burrows. The findings would be compiled, and any changes would be used to inform a riparian mammal protection plan for the construction phase of the Proposed Development. This plan would form part of the CEMP and include sensitive Site clearance methodologies to reduce impacts on riparian mammals.
- 4.5.3 A precautionary method of works should be prepared as part of the CEMP, with a phased approach to vegetation clearance. The precautionary method of works should be communicated to all site personnel to raise awareness of potential presence of protected and notable species, specifically amphibians and riparian mammals.

-
- 4.5.4 At present, a European Protected Species (EPS) licence or other mitigation licence is not required for the species discussed in this report. In the event that new resting places are recorded within 30 m of the Site and potential impacts on otters or their resting places cannot be avoided, a European Protected Species (EPS) licence must be sought from Natural Resources Wales and appropriate mitigation designed. Similarly, where water vole burrows are recorded and cannot be avoided as part of construction, a licence must be obtained from Natural Resources Wales. In the unlikely event that great crested newt is discovered during construction, all work must cease and a licence must be sought from Natural Resources Wales.
- 4.5.5 Ditch management to reduce pressure from dense bankside vegetation, and continued build up of duckweed and other undesirables could be implemented to deliver restoration. All ditch management proposals would need to be discussed and agreed with Natural Resources Wales given their location within the Gwent Levels SSSI.

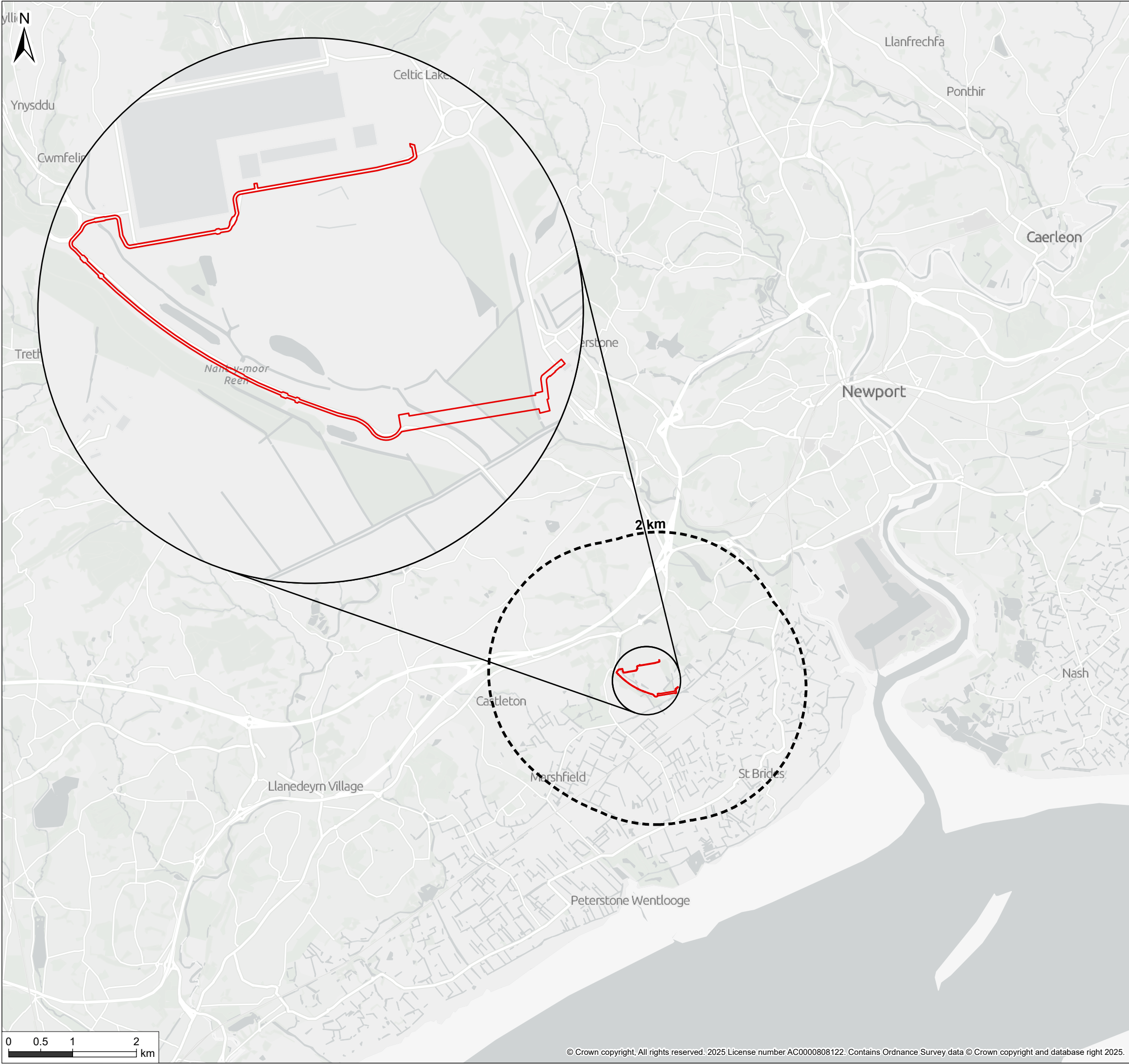
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- RPS (2025^c) Imperial Park Cable Route Arboricultural Impact Assessment.

Figures

Figure 1 Site Location

Figure 2 Otter, Water Vole and Great Crested Newt Survey Results





Legend

 Cable route

 2 km buffer



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Project Name		Imperial Park Cable Route		
Drawing Title		Location Plan		
Figure Number		1		
Drawing Number		22022-0006-03		
03	11/09/2025	FINAL	AC	LR
Rev	Date	Status	By	CB
Scale @ A3		Plot Size	Datum	
1:60,000		294 x 277 mm	OSGB 1936	

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Legend

- Cable Route
- Wet ditch
- Running water
- Waterbody

Great Crested Newt eDNA

- Absent

Otter Signs

- Camera trap
- Spraint
- Potential resting place (couch)

Water Vole Signs

- Droppings



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Project Name		Imperial Park Cable Route		
Drawing Title		Otter, Water Vole and Great Crested Newt Survey Results		
Figure Number		2		
Drawing Number		22022-0004-04		
04	20/10/2025	FINAL	AC	LR
Rev	Date	Status	By	CB
Scale @ A3		Plot Size	Datum	
1:4,500		294 x 277 mm	OSGB 1936	

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Appendix A

Site Photographs

Table A 1 Site Photographs Captured During Otter, Water Vole and Great Crested Newt Surveys



Photograph 1: Camera trap location one in June 2025



Photograph 2: Northern section of Nant-y-Moor Reen in June 2025



Photograph 3: Otter spraint in the northern section of Nant-y-Moor Reen in June 2025



Photograph 4: Otter spraint along bankside of pond, just north east of Nant-y-Moor Reen in June 2025



Photograph 5: Northern section of Nant-y-Moor Reen in June 2025



Photograph 6: Dense reed section of Nant-y-Moor Reen, north of culvert in June 2025



Photograph 7: Culvert under Road to Nature in August 2025



Photograph 8: Vegetation south of culvert in August 2025



Photograph 9: Southern section of Nant-y-Moor Reen within mixed woodland in June 2025



Photograph 10: Southern section of Nant-y-Moor Reen, west of southernmost otter spraint in June 2025



Photograph 11: Location of southernmost otter spraint. Undeneath footbridge, within mixed woodland. Potential laying up site in June 2025



Photograph 12: Location of possible water vole droppings (water vole droppings) in June 2025



Photograph 13: Westernmost ditch (off Percoed Reen), just north of the roundabout in August 2025



Photograph 14: Westernmost ditch (off Percoed Reen) section north of the roundabout at the eastern end of the Road to Nature in June 2025



Photograph 15: Western most wet ditch (off Percoed Reen), north of the Orchid Meadow in June 2025



Photograph 16: Percoed Reen at the start of Percoed Lane in June 2025



Photograph 17: Percoed Reen south of the National Grid Electricity Substation in June 2025



Photograph 18: Easternmost wet ditch (off Percoed Reen) west of National Grid Electricity Substation in June 2025



Photograph 19: Westernmost pond bankside in June 2025



Photograph 20: Percoed Reen south of National Grid Electricity Substation, south west of overhead line tower in August 2025



Photograph 21: Nant-y-Moor Reen covered by common duckweed north west of water vole droppings in August 2025



Photograph 22: Further along Nant-y-Moor Reen to the west in August 2025, east of footbridge



Photograph 23: Easternmost ditch (off Percoed Reen)



Photograph 24: Feeding platform (with uneaten fruit), within westernmost ditch (off Percoed Reen), north of the Orchid Meadow



Photograph 25 Camera trap 2

Photograph 26: Camera trap 1



Photograph 27: Westernmost ditch (off Percoed Reen), dry at its most northern point in August 2025



Photograph 28: Wider section of Nant-y-Moor Reen in August 2025



Photograph 29: Flatter bankside section of Nant-y-Moor Reen in the north, just south east of spraint location in August 2025



Photograph 30: Dense vegetation growth near northernmost spraint location within Nant-y-Moor Reen in August 2025

Appendix B

Great Crested Newt eDNA Results

Folio No: 2484-2025
Purchase Order: E0042
Contact: RPS Group Planning & Development
Issue Date: 27.06.2025
Received Date: 13.06.2025

GCN Report

Technical Report



SureScreen Scientifics

Folio No: 2484-2025
Purchase Order: E0042
Contact: RPS Group Planning & Development
Issue Date: 27.06.2025
Received Date: 13.06.2025

GCN eDNA Analysis

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 analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 7459	Imperial Park	ST 282 838	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Amy Bermudez

Approved by: Lauryn Jewkes



Methodology

The samples detailed above have been analyzed 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 tube which then undergoes DNA extraction. The extracted sample is then analyzed 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 attention to detail to prevent the 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 analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:

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. Any samples which fail this test are rejected and eliminated before analysis.

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.

Inhibition Check:

Pass/Fail. The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. 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 the WC1067 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.

Inconclusive: Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.

