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Appendix 10.6 Great Crested
Newt Presence / Absence Survey
2014

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Welsh Government

M4 Corridor Around Newport

Great Crested Newt

Presence/Absence Surveys Report
2014

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1 Introduction

Ove Arup & Partners Ltd has been commissioned by Welsh Government to undertake baseline ecological surveys to inform proposals for the M4 Corridor Around Newport (M4 CAN) and any subsequent Environmental Impact Assessment (EIA) for a motorway to the South of Newport. This report provides information on the presence of great crested newts (*Triturus cristatus*) within the vicinity of the preferred route of the M4 CAN to inform the development of the scheme, including a Design Manual for Road and Bridges (DMRB) Stage 3 environmental assessment (HA, 1993).

Great crested newts have been found in a number of locations within the Gwent Levels during previous surveys for the New M4 Project, the M4 Steelworks Access Road and other developments. For the purposes of this report, we shall refer to these areas as Areas A, B, and C.

1.1 Background to the Project

The M4 in South Wales forms part of the Trans-European Transport Network (TEN-T), which provides connections throughout Europe by road, rail, sea and air. The M4 plays a key strategic role in connecting South Wales with the rest of Europe, providing links to Ireland via the ports in South West Wales and England and mainland Europe to the east. It is a key east-west route being the main gateway into South Wales and also one of the most heavily used roads in Wales.

Providing a facility for transporting goods, linking people to jobs and employment sites as well as serving the Welsh tourism industry, the M4 is critical to the Welsh economy. Cardiff, Newport and Swansea have ambitious regeneration strategies and Monmouthshire County Council is developing areas around Junction 23A of the M4. Rhondda Cynon Taff has important gateways onto the motorway at Junctions 32 and 34. Bridgend is served by M4 Junctions 35 and 36. Neath Port Talbot straddles the motorway and gets important access from Junctions 38 to 43. Congestion on the M4 causing unreliable journey times and reduced service levels will therefore hinder economic development in South Wales.

The M4 between Junctions 28 and 24 was originally designed as the 'Newport Bypass' with further design amendments in the 1960s to include the first motorway tunnels to be built in the UK.

The M4 Motorway between Magor and Castleton does not meet modern motorway design standards. This section of the M4 has many lane drops and lane gains, resulting in some two-lane sections, an intermittent hard shoulder and frequent junctions.

It is often congested, especially during weekday peak periods resulting in slow and unreliable journey times and stop-start conditions with incidents frequently causing delays.

This is why problems with congestion and unreliable journey times have been a fact of life on the M4 around Newport for many years. The motorway and surrounding highway network does not cope with sudden changes in demand or operation, for example as a result of accidents or extreme weather events. These

issues are worse at times of peak travel (rush hour) and have worsened as the number of users on the network has increased.

Since 1991, much assessment and consultation has been undertaken to develop a preferred solution to the problems on the motorway around Newport. A detailed history is documented in the M4 Corridor around Newport WelTAG (WG, 2008) Stage 1 (Strategy Level) Appraisal Report (Ove Arup & Partners Ltd, 2013). This included the adoption of a revised TR111 route¹ in April 2006, which remains protected for planning purposes. The alignment of this proposed new section of motorway has been developed following extensive consultation, investigation and analysis. The aim was to minimise the impact on the environment, whilst fully meeting motorway design and safety standards. The main element of the Plan (the Black Route) largely follows this TR111 alignment.

The survey design is informed by the Route Options defined in the Stage 2 DRMB Environmental Report (Ove Arup & Partners Ltd, 2014).

1.2 Survey Objectives

The objectives of the study were:

- To establish whether great crested newts are present in the water bodies included within the survey;
- To provide information on the existing ecological conditions at the site with regards to great crested newts;
- To identify potential constraints and opportunities that great crested newts may pose to any scheme;
- To identify further studies that may be required to ensure that great crested newts are fully considered within the scheme.

1.3 Study Area

The study area for the purpose of this survey was based on a 500m buffer around the physical extents of the previous scheme studied in 2007/8 including the route alignment, potential junctions and water treatment areas. The Preferred Route announced by Welsh Government in July 2014 is located within the centre of this corridor as shown on Figure 1.

¹ Once a preferred route is announced, Welsh Government serves a statutory notice (TR111) on the local planning authorities requiring the line to be protected from development. This is enacted under Article 19 of The Town & Country Planning (Development Management Procedure) (Wales) Order 2012.

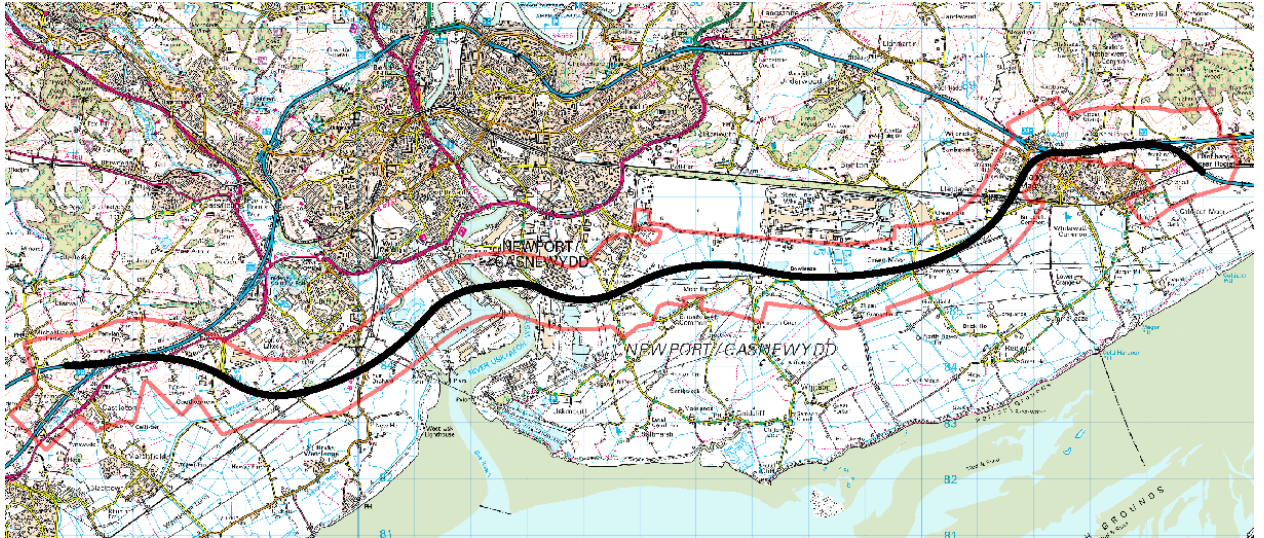


Figure 1 The 2014 Preferred Route within the Study area shown in red.

The study area is a stretch of land between Whitson and Magor, located within rural habitats dominated by improved grassland fields, bounded by a network of reens and field ditches, with hedgerows and standard trees.

1.4 Legislation

Great crested newts (GCN) are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended) (known as the Habitats Regulations) as European Protected Species.

These pieces of legislation together make it an offence to deliberately capture, injure or kill a great crested newt, to deliberately disturb a GCN in such a way as to significantly affect its ability to breed or its local distribution or to damage or destroy a breeding or resting place used by a GCN; and to intentionally or recklessly disturb a GCN while it is in place used for shelter or protection or to obstruct access to such a place.

2 Methodology

2.1 Survey methodology

Initial Habitat Suitability Index (HSI) assessments of those water bodies within the study area that could be assessed from roads and public rights of way were undertaken by Arup during February 2014 prior to issuing Notices of Intention to Enter Land under the Highways Act 1980. These assessments were made in accordance with the methodology set out in Advice Note 5 published by the Amphibian and Reptile Group UK (ARGUK, 2010).

The HSI methodology has been developed to assess the suitability of ponds for use as breeding sites by great crested newts. It was therefore necessary to adapt the methodology to take into account the reens and ditches which characterise the Gwent Levels, and which great crested newts have been found to use. This was achieved by discounting the area, waterfowl and pond density indices from the HSI assessment. This adaptation of the methodology was discussed with Natural Resources Wales via a letter sent on 7th February 2014. The approach was welcomed by NRW in their response dated 3rd March 2014.

The results of the HSI surveys (shown on Drawings 135 – 148) were used to identify waterbodies considered to have average or above suitability for great crested newts which were selected for presence absence surveys where access allowed. The water bodies to be surveyed were located in three discrete groups, referred to as Areas A, B and C. The presence/absence surveys were undertaken by BSG Ecology (Areas A and B) and Ecosulis (Area C), and their reports are included in the appendices of this report.

Presence/absence surveys were carried out according to the guidance provided in the Great Crested Newt Mitigation Guidelines (EN, 2001). The guidelines state that in order to determine presence, or likely absence, of great crested newts within ponds, four data sets are required. Three survey methods should be used per visit (preferably torch survey, bottle-trapping and egg search but also netting if any of the other methods are not possible). The surveys should be undertaken between mid-March and mid-June, with at least two survey visits during mid-April to mid-May.

The site visits required to obtain these data sets were undertaken between 24 April 2014 and 29 May 2014, which falls within the aquatic phase of the great crested newt life cycle (mid-March to mid-June). The visits were undertaken when the temperature was consistently above 5°C and when the night-time weather was suitable, i.e. little or no wind and rain. All species of amphibians were identified and recorded during this survey. Where it was not possible to carry out three methods, the reasons for this are set out in Tables 1, 2 and 3.

2.1.1 Torch survey

The torch surveys were carried out after sunset by shining a high powered (1 million candlepower) torch into the water. The bank of the water body was walked slowly once and all newts seen were identified where possible.

2.1.2 Bottle trapping

Bottle traps were positioned in the water bodies in the late afternoon to early evening. Following the Guidelines bottle traps were positioned at approximately 2m intervals around the margins of a pond and at 5m intervals within reens.

Bottles were angled to allow for a bubble of air. The bottle traps were collected the following morning, and any animals found were identified to species and gender, then released back in to the water body.

2.1.3 Egg searches

Where aquatic and marginal vegetation (and other suitable substrates) was present in the water body, a search for the presence of great crested newt eggs was undertaken. If an egg was found (and presence of great crested newt confirmed), this method of sampling would then stop to avoid further disruption to the vegetation, in accordance with Guidelines.

2.1.4 Net searches

Searches of the water bodies were conducted using a long-handled dip-net. This was carried out where one or more of the other survey methods were not possible. The perimeter was walked and the net agitated through aquatic vegetation in a two-metre arc after sunset. Any newts were caught, identified, and then released.

2.1.5 Refuge searches

Within Area C due to the restrictions to the use of some survey methods documented below, the searching of existing refuges such as logs, tarpaulin, paving slabs, wooden planks and debris within the terrestrial habitats immediately surrounding the water bodies was also undertaken. Any newts found were identified to species and gender, counted and recorded before being released. Other amphibians were also recorded when found.

2.2 Details of surveyors

The surveys were led by licensed surveyors from BSG Ecology and Ecosulis. For Ecosulis, the surveys were led by Matt Levan, working under Natural Resources Wales Great Crested Newt survey licence number 47638: OTH: SA: 2013. For BSG Ecology, lead surveyors were Stephanie Boocock MCIEEM (licence reference 44222: OTH: SA: 2013) and Anton Kattan MCIEEM (an accredited agent on licence reference 41533: OTH: SA: 2012) assisted by Leanda Morrison and Owain Waters.

2.3 Limitations and Assumptions

Due to access constraints, only 55 of the 89 waterbodies identified as being potentially suitable for great crested newts within the HSI exercise could be surveyed. These constraints included areas for which there is no known owner or occupier and areas where Notices had yet to be served at the time of the surveys. It is anticipated that the waterbodies affected in this were would be included within survey proposed during 2015.

Figures illustrating the location of the waterbodies that were surveyed are shown in the survey reports (see Appendix A and Appendix C). All surveys were carried out at an optimal time of year and in appropriate weather conditions (where possible) as specified in the Great Crested Newt Mitigation Guidelines.

In some instances there were limitations to the surveys with respect to the ability to use certain survey methods (eg. dense vegetation limiting ability to use torch survey method), which limited the number of visits possible to each water body. Rain showers and resultant changes in water levels also affected the ability to use certain survey methods. The limitations to the surveys are summarised for each water body in Table 1.

The behaviour of animals can be unpredictable and may not conform to standard patterns recorded in current scientific literature. The report therefore cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats or that they will not occur in locations or habitat that appear unsuitable.

Table 1 - Limitation to surveys

Water body	Constraint	Reason
12	Only 2 methods used on Survey 3.	Steep-sided reen – netting and egg searching too dangerous when water level low.
13	Only 2 methods used.	Steep-sided reen – access not possible for egg-searching or netting.
27	Only 2 methods used for Surveys 2 and 3.	Steep-sided reen – netting and egg searching too dangerous when water level low.
28	Only 2 methods used for Surveys 2 and 3 and 1 method for Survey 4.	Steep-sided heavily scrubbed reen – access too dangerous.
43	Only 1 method used for last 3 surveys.	Steep-sided reen – access too dangerous for egg-searching, bottle trapping or netting.
64	Only 1 method used.	Steep-sided reen – access too dangerous for egg-searching, bottle trapping or netting.
90	Only 1 method used for last 3 surveys.	Steep-sided reen – access too dangerous for egg-searching, bottle trapping or netting.
187	Only 2 methods used for Survey 3.	Water level low and vegetation too dense to torch and net.
188	Only 2 methods used for Survey 3.	Water level low and vegetation too dense to torch and net.
192	Only 2 methods used for Survey 3.	Water level low and vegetation too dense to torch and net.
319	Not surveyed on Survey 3 and only 1 method used on Survey 4.	Steep-sided heavily scrubbed reen – access too dangerous.
320	Only 2 methods used for Survey 3.	Steep-sided heavily scrubbed reen – access too dangerous.

321	Only 2 methods used for Survey 3 no access Survey 4.	Too turbid for effective torching. Land-owner did not permit access to this land as cows were present.
476	Only 2 methods used for last 2 surveys.	Steep-sided heavily scrubbed reën – access dangerous and difficult.
481	Only 1 method used.	Steep-sided reën – access too dangerous.
487	Only 2 methods used for first 2 surveys. Surveys 2 and 3 not carried out.	Initially too shallow for effective survey, later dried out completely.
540	Limited survey method.	Due to low water levels.
571	Netting could not be undertaken	Refugia search undertaken instead
586	50m of ditch not surveyed.	Due to aggressive dogs adjacent to ditch.
651	Access restricted. Limit to torching as a suitable survey method.	Tall vegetation and steep banks.
675	Access restricted.	Torching limited by dense bramble on the banks, dense reeds in the channel and occasional rain on the 25 th May 2014. Bottle trap numbers limited by shallow water.
677	Limited survey method.	Rise in water level after heavy rain restricted the bottle trapping number on 27 May 2014. Torching was only suitable survey method.
678	No land access to ditch. Survey limited to torch and refuge search possible.	Access permission not granted.
760	Access restricted.	Water level limited access for bottle trapping or netting, refuge search undertaken instead.
1170	Access restricted - only torch and refuge searches were undertaken.	Water body inaccessible due to steep banks.
1342	Access restricted survey.	Access restricted due to steep banks. Only torch and refuge searches undertaken.
1344	Access restricted survey.	Access restricted due to tall vegetation and steep banks.

3 Results

3.1 Summary

No great crested newts were found in any of the water bodies included in the survey area. See Table 2, 3 and 4 for a summary of the results, and see Appendix A and B for the original survey information. Both smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*) were recorded during the surveys.

In five of the water bodies (43, 56, 97, 117 and 291) there were large numbers of sticklebacks present. Sticklebacks have been known to predate upon newt eggs and larvae, and therefore the presence of fish could adversely affect the suitability of those water bodies for great crested newts.

3.2 Anecdotal Sightings

An adult smooth newt was found on the 28th September 2014 during a reptile survey in the area to the south of the Quinn Radiators Factory at grid reference ST28255 83961. A juvenile smooth or palmate newt was also recorded on the 29th September in fields near Bareland Street at grid reference ST40424 86527, during a reptile survey.

3.3 Interpretation of findings

No great crested newts were recorded during the surveys of any water body in the surveyed area..

Both smooth newts and palmate newts were recorded during the survey. However, the smooth newt and palmate newt is protected under schedule 5 of the Wildlife and Countryside Act (1981), with respect to sale only. They are considered to be breeding within the area from the presence of juvenile newts.

Adults and larvae of the common toad (*Bufo bufo*) were recorded within one water body. Common toad is listed on Section 42 of The Natural Environment and Rural Communities (NERC) Act 2006 which lists organisms of principal importance for biological conservation in Wales. Section 40 of the same Act imposes a duty on every public body, in exercising its functions, to “have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. Common frog (*Rana temporaria*) larvae were recorded within one water body.

Table 2 - Results of the survey, Area A

Number	Survey 1				Survey 2				Survey 3				Survey 4			
	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net
4	2fLh, 3mLh	5Lv / Lh, 1Lv/Lh (i)	Lv/Lh	1mLh	2mLv,6m 1f, 1(i)Lh	6Lv/La	Lv/Lh	1mLv, 3mLh	1mLv, 1m3f, 1(i)Lh	1Lv/L h	0	2fLv, 1f1(i) Lh	1m2fL v, 3m2f, 1(i)Lh	0	0	0
11	0	2Lv/Lh	NA	0	1m2fLv	7Lv/L h, 10+Rt(i)	NA	2fLv	2mLv, 10+Rt(i)	3Lv/L h, 1Rt	NA	1mLv, 1Rt, 15(i)R t	0	20Rt	NA	0
12	1mLv, 10+Rt(i)	3Lv/Lh	0	0	2fLv, 10+Rt(i)	2Lv/L h, 10+Rt(i)	0	0	1m1fL v, 1Rt	4Lv/L h, 20Rt	N/A	N/A	0	0	0	N/A
13	10+Rt(i)	2Lv/Lh	N/A	N/A	0	3Lv/L h, 1Rt	N/A	N/A	1mLv, 10+Rt(i)	2Lv/L h, 10+Rt(i)	N/A	N/A	1fLv,1 0+Rt(i)	10+Rt(i)	N/A	N/A
19	0	2Lv/Lh	0	1Rt	2mLv, 10Rt(i)	1Lv/L h, 1Rt	Lv/Lh, Rt	1Rt, 10+Rt(i)	1mLv, 10+Rt(i)	2Lv/L h, 2Rt	Lv/Lh	2m, 1fLv, 5Rt	10+Rt(i)	0	0	0
27	1fLh	5Lv/Lh , 1Rt	N/A	8Rt(i)	2mLh	3Lv/L h	N/A	N/A	1f1mL h	1Lv/L h	N/A	N/A	0	0	0	N/A
28	10+Rt(i)	10+Rt(i)	N/A	10+Rt(i)	0	10+Rt(i)	N/A	N/A	10+Rt(i)	0	N/A	N/A	10+Rt(i)	N/A	N/A	N/A

Number	Survey 1				Survey 2				Survey 3				Survey 4			
34	1mLv, 1fLv	0	0	N/A	0	1Bb	0	N/A	0	0	0	N/A	0	0	0	N/A
43	0	10+ stickle backs	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	N/A	1Rt(i)	N/A	N/A
56	0	0	0	N/A	10+stickl eback	0	0	N/A	0	0	0	N/A	0	0	0	N/A
64	N/A		N/A	N/A	N/A	1Rt(i)	N/A	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A
90	0	0	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A
97	0	0	0	N/A	10+stickl eback	0	0	N/A	0	0	0	N/A	0	0	0	N/A
117	1fLv, 1Rt	0	0	N/A	1mLv	0	0	N/A	0	0	0	N/A	0	N/A	0	10+sti ckleba cks
119	1mLv, 10+Rt(i)	0	0	N/A	1Rt, 1Bb	1Bb	0	N/A	0	0	0	N/A	0	N/A	0	0
135	mLv(i)	10+Rt(i)	0	N/A	1mLv, 1fLv	1fLv	0	N/A	0	1Rt	0	N/A	0	N/A	0	0
146	0	10+Rt(i) & Bb(i)	0	N/A	1Rt	1Rt	0	N/A	N/A	N/A	N/A	N/A	0	N/A	0	0
181	0	0	0	N/A	0	0	0	N/A	0	0	0	0	0	N/A	0	0
187	0	0	0	N/A	10+Rt(i)	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
188	0	0	0	N/A	0	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
191	0	0	0	N/A	0	0	0	N/A	0	0	N/A	0	0	0	N/A	0
192	0	0	0	N/A	0	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
227	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A
291	0	0	0	N/A	10+stickl eback	0	0	N/A	0	0	0	N/A	1Bb(i)	0	0	N/A
292	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A

Number	Survey 1				Survey 2				Survey 3				Survey 4			
305	0	0	0	N/A	2mLv, 10+stickl eback	0	0	N/A	0	0	0	N/A	0	1Lv	0	N/A
319	0	0	0	N/A	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
320	0	0	0	N/A	0	0	0	N/A	0	N/A	N/A	0	0	0	0	N/A
321	0	0	0	N/A	0	0	0	N/A	0	N/A	N/A	0	NA	NA	NA	NA
Key: Lv - <i>Lissotriton vulgaris</i> (Smooth newt); Lh – <i>Lissotriton helveticus</i> (Palmate newt); Rt – <i>Rana temporaria</i> (Common frog); Bb – <i>Bufo bufo</i> (Common toad); (i) – immature/larvae; m – male; f – female N/A = Survey methodology not used. NA = No access																

Table 3 – Results of the survey, Area B

Number	Survey 1				Survey 2				Survey 3				Survey 4			
	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net
379	0	0	0	0	0	1f, 1mLv/Lh	0	0	0	0	0	1mLv	0	0	0	0
394	0	10Rt(i)	N/A	2Rt(i)	0	5Rt	N/A	1Rt	0	0	N/A	0	0	0	N/A	0
406	1mLv, 10+Rt(i)	0	N/A	0	1fLv, 2m1fLh, 1Rt	N/A	N/A	2mLv, 1mLh, 10+Rt(i)	1m2fLv, 1fLh, 10+Rt(i)	N/A	N/A	1mLv, 1mLh, 10+Rt(i)	1mLv, 1fLh	N/A	N/A	2mLv
419	0	0	0	0	1mLv	1Rt	0	1fLv, 1Rt	1mLv	0	0	1mLv	2mLv	2Lv/Lh	0	1Rt
420	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0
430	1m1fLv	6Lv/Lh	N/A	0	3m,1(i)Lv	4Lv/Lh	N/A	1fLv	2mLv	4Lv/Lh	N/A	1fLv	1fLv	7Lv/Lh	N/A	0

Number	Survey 1				Survey 2				Survey 3				Survey 4			
441	1mLv, 10+Rt(i)	4Lv/Lh , 2Rt	0	10+Rt(i)	1fLv, 1Rt	2Lv/Lh, 2Rt	0	1mLv, 10Rt(i)	2fLv, 1mLh , 1Rt	3Lv/ Lh, 2Rt	N/A	1mLv	1mLv , 2f1m Lh, 3Rt	2Lv/ Lh	N/A	1m1f Lv
443	1mLv	5Lv/Lh , 10+Rt(i)	0	N/A	1fLv,1 0+Rt(i)	3Lv/Lh, 10+Rt(i)	0	N/A	2mLv, 10+Rt(i)	2Lv/L h, 10+Rt(i)	0	N/A	2mLv	3Lv/L h	0	N/A
444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
445	4m1fLv	0	0	N/A	3m2fLv	1Lv/Lh	0	N/A	2m2fLv	2Lv/L h	0	N/A	5m3fLv	4Lv/L h	0	N/A
476	4m2f1(i)Lv	1Lv/Lh	N/A	N/A	2mLv, 2mLh	1Lv/Lh	N/A	N/A	3mLv, 1fLh	1Lv/L h	N/A	N/A	6m1fLv	0	N/A	N/A
481	N/A	1Lv/Lh	N/A	N/A	N/A	0	N/A	N/A	N/A	1Lv/L h	N/A	N/A	N/A	2Lv/L h	N/A	N/A
487	N/A	2Rt	N/A	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Key: Lv - <i>Lissotriton vulgaris</i> (Smooth newt); Lh– <i>Lissotriton helveticus</i> (Palmate newt); Rt – <i>Rana temporaria</i> (Common frog); Bb – <i>Bufo bufo</i> (Common toad); (i) – immature/efts/tadpoles; m – male; f – female</p> <p>N/A = Survey methodology not used.</p> <p>NA = No access</p>																

Table 4 – Results of the survey, Area C

Number	Survey 1				Survey 2				Survey 3				Survey 4			
	Bottle	Torch	Refuge	Net	Bottle	Torch	Refuge	Net	Bottle	Torch	Refuge	Net	Bottle	Torch	Refuge	Net
540	0	0	N/A	0	0	0	N/A	0	0	0	0	0	0	0	0	0
571*	2Lv	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A
586	0	0	N/A	0	1Lv	0	N/A	0	0	0	N/A	0	2Lv	0	N/A	0
651	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A
672	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A
675*	1Lv	0	N/A	N/A	0	0	N/A	N/A	3Lv	N/A	N/A	0	0	N/A	N/A	0
676	2Lv	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	1Lv, 1Lh	0	N/A	N/A
677	0	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	0	0	N/A	N/A	0
678	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A
760	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A
1170	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A
1342	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A	N/A	0	0	N/A

1344	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0
<p>Key: Lv - <i>Lissotriton vulgaris</i> (Smooth newt); L – <i>Lissotriton helveticus</i> (Palmate newt).</p> <p>N/A = Survey methodology not used.</p> <p>NA = No access</p> <p>* At water body 571, 3 toads and toad tadpoles were identified during the survey period. Common frog tadpoles were identified during the survey period at water body 675.</p>																

4 Conclusions and Recommendations

No great crested newts were recorded during the presence absence survey despite the presence of suitable habitat and previous records. Populations of smooth/palmate newt were identified in all three of the areas surveyed.

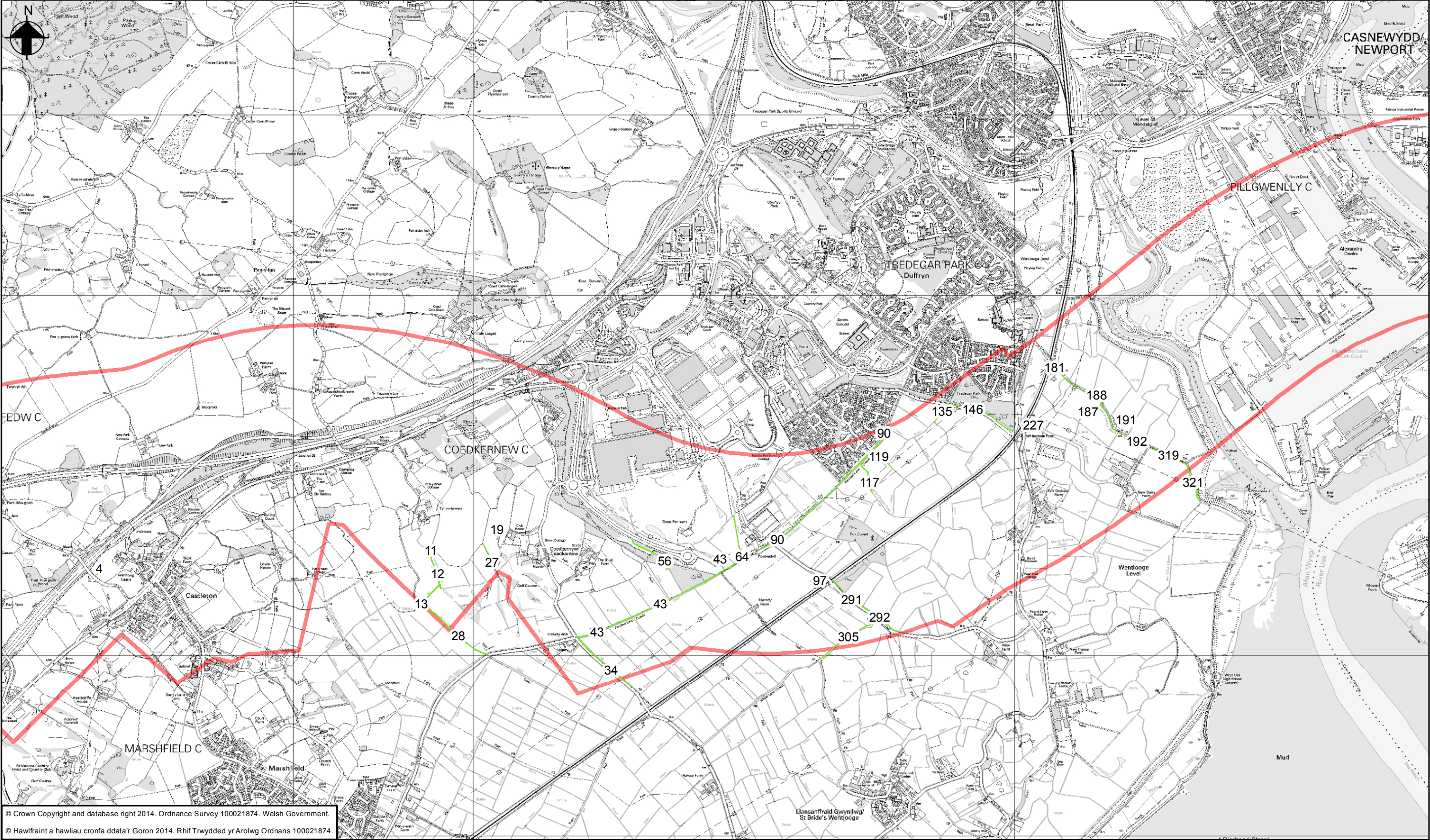
These surveys only covered a small number of waterbodies within the survey area due to limitations on access at the time. It is recommended that remaining waterbodies considered through HSI assessments to be suitable for great crested newts are surveyed in 2015.

It is also recommended that the presence of amphibians within the study area, including notable species such as common toad which is a Section 42 list species, is considered during the design and any subsequent construction phases.

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Drawings



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Legend

Reens surveyed

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For Issue				
Issue	Date	By	Chkd	Appd

Client



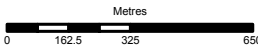
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Caerdydd
CF10 3NQ

Job Title

M4 Corridor Around Newport
Coridor yr M4 o amgylch Casnewydd



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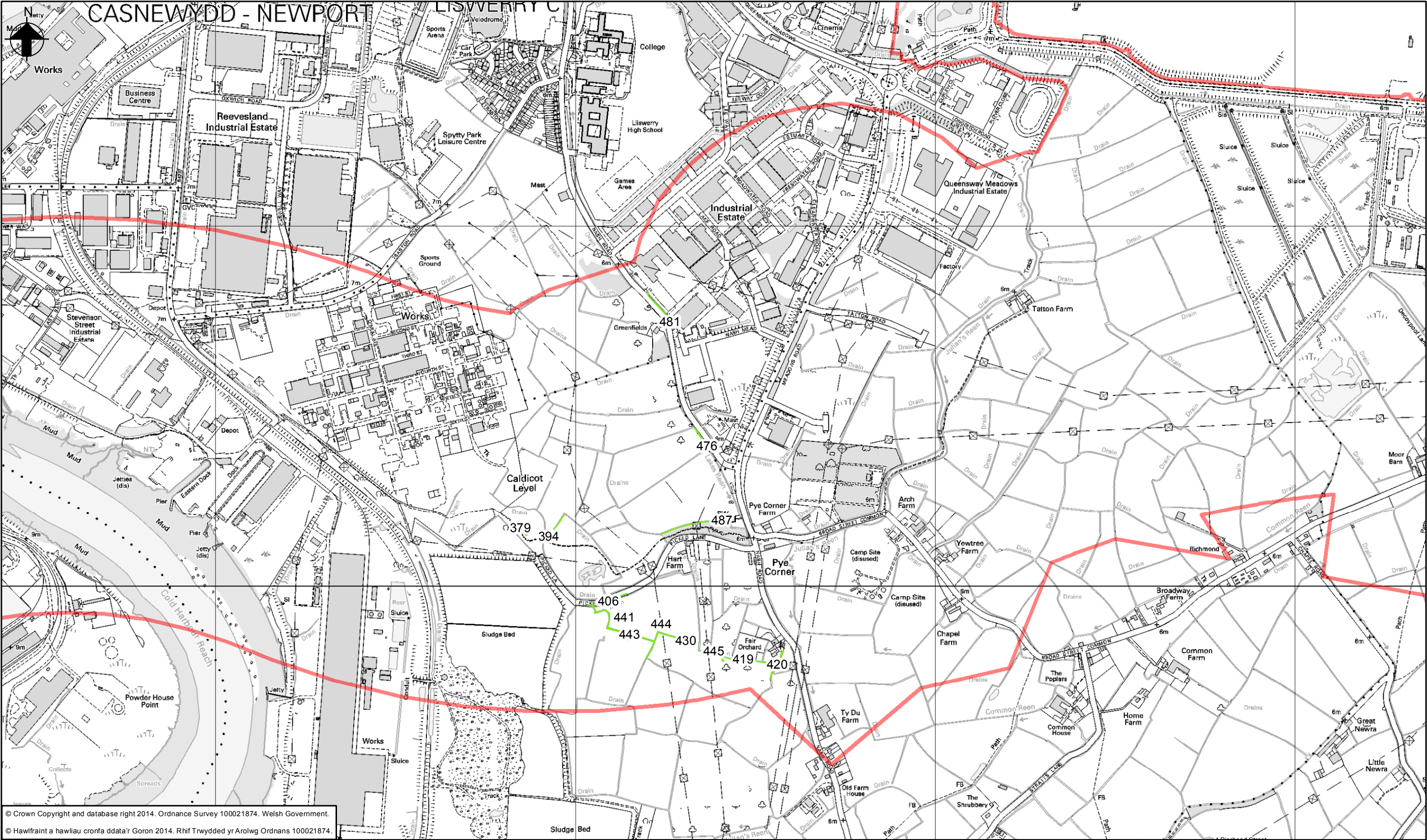
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Great Crested Newt Survey Plans - Area A

Job No 117300-01	Drawing Status For Issue	Issue F1
Drawing No M4-OA-01-00-DR-Z-AM-0001		



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Legend

Reens surveyed

F1	2014-10-09	PW	PC	PW
For Issue				
Issue	Date	By	Chkd	Appd

Client



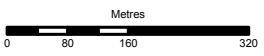
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Job Title

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Coridor yr M4 o amgylch Casnewydd



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1:10,000

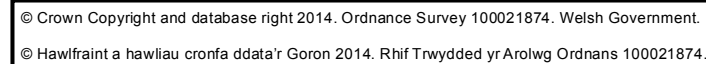
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Great Crested Newt Survey Plans - Area B

Job No	Drawing Status
117300-01	For Issue
Drawing No	Issue
M4-OA-01-00-DR-Z-AM-0002	F1



Reens surveyed

F1	2014-10-09	PW	PC	PW
For Issue				
Issue	Date	By	Chkd	Appd



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Thrafnidiaeth
Llywodraeth Cymru
Parc Cathays
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A scale bar labeled 'Metres' with markings at 0, 100, 200, and 400.

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Great Crested Newt Survey Plans - Area C

Issue	F1
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Appendix A

Dates and Weather Conditions of Surveys

Dates and Weather conditions of the surveys

Table 5 – Dates and Weather conditions during the survey, Area 1

Water body number	Survey 1		Survey 2		Survey 3		Survey 4	
	Date	Weather	Date	Weather	Date	Weather	Date	Weather
4	28/04/2014	Overcast 12°C	08/05/2014	Overcast 13°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
11	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
12	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
13	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
19	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
27	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
28	28/04/2014	Overcast 12°C	06/05/2014	Overcast 16°C	12/05/2014	Overcast 11°C	27/05/2014	Overcast 14°C
34	22/04/2014	Overcast 12°C	28/04/2014	Overcast 11°C	09/06/2014	Clear 12°C	10/06/2014	Clear 13°C
43	22/04/2014	Overcast 12°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	10/06/2014	Clear 13°C
56	22/04/2014	Overcast 12°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	09/06/2014	Clear 12°C
64	23/04/2014	Clear 14°C	29/04/2014	Overcast 17°C	03/06/2014	Clear 12°C	10/06/2014	Clear 13°C
90	23/04/2014	Clear 14°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	09/06/2014	Clear 12°C
97	23/04/2014	Clear 14°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	09/06/2014	Clear 12°C
117	23/04/2014	Clear 14°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	10/06/2014	Clear 13°C
119	23/04/2014	Clear 14°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	10/06/2014	Clear 13°C
135	24/04/2014	Clear 13°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	10/06/2014	Clear 13°C

146	24/04/2014	Clear 13°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	10/06/2014	Clear 13°C
181	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
187	24/04/2014	Clear 13°C	30/04/2014	Overcast 17°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
188	24/04/2014	Clear 13°C	30/04/2014	Overcast 17°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
191	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
192	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
227	24/04/2014	Clear 13°C	29/04/2014	Overcast 17°C	04/06/2014	Clear 13°C	10/06/2014	Clear 13°C
291	23/04/2014	Clear 14°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	09/06/2014	Clear 12°C
292	23/04/2014	Clear 14°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	09/06/2014	Clear 12°C
305	23/04/2014	Clear 14°C	28/04/2014	Overcast 11°C	03/06/2014	Clear 12°C	09/06/2014	Clear 12°C
319	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
320	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C
321	24/04/2014	Clear 13°C	30/04/2014	Overcast 13°C	29/05/2014	Cloudy 16°C	11/06/2014	Cloudy 14°C

Table 6 – Dates and Weather conditions during the survey, Area 2

Water body number	Survey 1		Survey 2		Survey 3		Survey 4	
	Date	Weather	Date	Weather	Date	Weather	Date	Weather
379	30/04/2014	Overcast 14°C	08/05/2014	Overcast 13°C	14/05/2014	Overcast 16°C	28/05/2014	Overcast 13°C
394	30/04/2014	Overcast 14°C	08/05/2014	Overcast 13°C	14/05/2014	Overcast 16°C	28/05/2014	Overcast 13°C
406	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C

419	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
420	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
430	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
441	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
443	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
444	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
445	29/04/2014	Overcast 14°C	07/05/2014	Overcast 10°C	13/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
476	30/04/2014	Overcast 14°C	08/05/2014	Overcast 13°C	14/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
481	30/04/2014	Overcast 14°C	08/05/2014	Overcast 13°C	14/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C
487	29/04/2014	Overcast 14°C	08/05/2014	Overcast 10°C	14/05/2014	Overcast 16°C	28/04/2014	Overcast 13°C

Table 7 – Dates and Weather conditions during the survey, Area 3

Water body number	Survey 1		Survey 2		Survey 3		Survey 4	
	Date	Weather	Date	Weather	Date	Weather	Date	Weather
540	01/05/2014	Overcast 14.5°C	10/05/2014	Overcast 13.5°C	17/05/2014	Warm, Sunny 19°C	20/05/2014	Occasional rain 14.5°C
571	17/05/2014	Warm, Sunny 19°C	20/05/2014	Occasional rain 16.5°C	23/05/2014	Occasional rain 12°C	27/05/2014	Overcast 16.5°C
586	02/05/2014	Overcast 11.5°C	11/05/2014	Rain 8.5°C	17/05/2014	Warm, Sunny 19°C	20/05/2014	Occasional rain 16.5°C

651	24/04/2014	Overcast after rain 6.5°C	11/05/2014	Rain 8.5°C	18/05/2014	Warm, Sunny 19°C	22/05/2014	Occasional rain 12.5°C
672	25/04/2014	Rain 9.5°C	22/05/2014	Occasional rain 12.5°C	25/05/2014	Occasional rain 12.0°C	28/05/2014	Overcast 15.5°C
675	25/04/2014	Rain 9.5°C	25/05/2014	Occasional rain 12°C	28/05/2014	Overcast 15.5°C	29/05/2014	Intermittent rain 12.5°C
676	24/04/2014	Overcast after rain 6.5°C	11/05/2014	Rain 8.5°C	18/05/2014	Warm, sunny 19°C	22/05/2014	Occasional rain 12.5°C
677	24/04/2014	Overcast after rain 6.5°C	22/05/2014	Occasional rain 12.5°C	23/05/2014	Occasional rain 12°C	27/05/2014	Overcast 16.5°C
678	10/05/2014	Overcast 13.5°C	12/05/2014	Rain and high winds 11°C	23/05/2014	Occasional rain 12°C	25/05/2014	Occasional rain 12°C
760	03/05/2014	Dry and sunny 14.5°C	12/05/2014	Rain and high winds 11°C	23/05/2014	Occasional rain 12°C	27/05/2014	Overcast 16.5°C
1170	24/04/2014	Overcast after rain 6.5°C	12/05/2014	Rain and high winds 11°C	18/05/2014	Warm, sunny 19°C	24/05/2014	Occasional heavy rain 12°C
1342	24/04/2014	Overcast after rain 6.5°C	01/05/2014	Overcast, drizzle 14.5°C	18/05/2014	Warm, sunny 19°C	24/05/2014	Occasional heavy rain 12°C
1344	24/04/2014	Overcast after rain 6.5°C	03/05/2014	Dry and sunny 14.5°C	12/05/2014	Rain and high winds 11°C	24/05/2014	Occasional heavy rain 12°C

Appendix B

BSG Ecology Report 2014

M4 Corridor around Newport

Great Crested Newt Surveys Lots 1
and 2

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Client	Ove Arup and Partners
Job	M4 Corridor around Newport
Report title	Great Crested Newt Surveys – Lots 1 and 2
Draft version/final	FINAL
File reference	7479_APPR_ag_jg_140721.docx

	Name	Position	Date
Originated	Anna Gundrey	Senior Ecologist	09 July 2014
Reviewed	James Gillespie	Partner	21 July 2014
Approved for issue to client	James Gillespie	Partner	21 July 2014
Issued to client	Anna Gundrey	Senior Ecologist	21 July 2014

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Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be secured.

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1 Introduction

Description of Project

- 1.1 Ove Arup & Partners Limited have been commissioned by the Welsh Government to undertake a range of baseline environmental surveys including ecological surveys with the aim of providing baseline information for any subsequent Environmental Impact Assessment for a new motorway to the south of Newport. Arup found that historical studies have identified great crested newts *Triturus cristatus* within ponds and reens on the Gwent Levels. On this basis they are carrying out Habitat Suitability Index (HSI) assessments of those ponds and reens within the study area that can be accessed from roads and public rights of way.
- 1.2 The first tranche of HSI assessments have been completed and Arup have commissioned BSG Ecology to undertake a presence/absence survey for great crested newts in water bodies that they have identified as having potential to support the species, within the survey areas known as Lot 1 and Lot 2.

Site Description

- 1.3 The survey area ('the site') consists of two blocks of land (referred to as 'Lot 1' and 'Lot 2') lying along the proposed route of a proposed new motorway. The site is located around Newport, South Wales and consists of a series of interlinking drainage ditches or 'reens' which form the field boundaries within an extensive area of flat, low-lying agricultural land known as the Gwent Levels. Lot 1 stretches between Castleton on the eastern edge of Cardiff, and the western limits of Newport. Lot 2 is situated to the south-east of Newport in an area called Pye Corner.

Aims of Study

- 1.4 The aim of the study is to establish whether great crested newts are present in the water bodies shown on the Figures in Appendix 1.

2 Methods

Access

- 2.1 Access to the water bodies was arranged by Arup on behalf of the Welsh Government. All affected landowners received a letter informing them that the surveys would be going ahead, through the powers held by Welsh Government under the Highways Act 1980.
- 2.2 BSG Ecology informed Arup of the weekly survey schedule, and were advised each week about which water bodies had been granted access permission.

Survey

- 2.3 The surveys were carried out according to the guidance on presence/absence surveys for great crested newts provided in the Great Crested Newt Mitigation Guidelines (English Nature 2001). The guidelines state that to determine presence/absence of great crested newts within ponds, four survey visits using three methods per visit (preferably torch survey, bottle-trapping and egg search but also netting if any of the other methods are not possible) should be used. The surveys should be undertaken between mid-March and mid-June, with at least two survey visits during mid-April to mid-May. The survey methods are described below. Where it was not possible to carry out three methods, the reasons for this are set out in Tables 1c and 2c.

Bottle Trapping

- 2.4 Bottle traps were positioned in the water bodies in the late afternoon - early evening. The guidance advises that bottles should be positioned at approximately 2m intervals around the margins of a water body, and this guidance was followed for the ponds. For reens, where the habitat is linear (most are approximately 1m wide), the ratio of bottle traps to water surface area is much greater than that of a pond. It was therefore decided (in agreement with Arup, Pete Wells *pers. comm.*) that approximately 5m intervals would provide sufficient coverage. The bottles were collected the following morning, and any animals found were identified and released.

Torch Survey

- 2.5 A search for great crested newts was carried out after sunset by shining a high power (1 million candlepower) torch into the water at each water body. The bank of the water body was slowly walked once, and all newts seen were identified where possible. Along reens with scrubby margins, the surveyors walked all areas of the bank that were accessible.

Egg Search

- 2.6 Where submerged vegetation was present in the water bodies, it was searched for great crested newt eggs. If an egg was found (and presence therefore confirmed), this method of sampling would then stop to avoid further disruption to the vegetation, in accordance with the guidelines.

Netting

- 2.7 Where one or more of the above survey methods was not possible, the water body was surveyed using a long-handled net. The margins of the water bodies were swept with a net after sunset and any newts caught were identified and released.

3 Results – Lot 1

3.1 No great crested newts were found in any of the water bodies surveyed in Lot 1. Table 1a provides details of the survey dates, surveyors and weather conditions. Table 1b shows the results of the survey.

Table 1a: Lot 1 – Survey Details

No.	Survey 1			Survey 2			Survey 3			Survey 4		
	Date	Surveyors	Weather	Date	Surveyors	Weather	Date	Surveyors	Weather	Date	Surveyors	Weather
1	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
4	28-29/04/14	AK, LM	Overcast 12°C	08-09/05/14	AK, LM	Overcast 13°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
11	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
12	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
13	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
19	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
27	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
28	28-29/04/14	AK, LM	Overcast 12°C	06-07/05/14	AK, LM	Overcast 16°C	12-13/05/14	AK, LM	Overcast 11°C	27-28/05/14	AK,LM	Overcast 14°C
34	22-23/04/14	SB, OW	Overcast 12°C	28-29/04/14	SB, OW	Overcast 11°C	09-10/06/14	SB, OW	Clear 12°C	10-11/06/14	SB, OW	Clear 13°C
43	22-23/04/14	SB, OW	Overcast 12°C	28-29/04/14	SB, OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	10-11/06/14	SB, OW	Clear 13°C
56	22-23/04/14	SB, OW	Overcast 12°C	28-29/04/14	SB, OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	09-10/06/14	SB, OW	Clear, 12°C
64	23-24/04/14	SB, OW	Clear 14°C	29-30/04/14	SB, OW	Overcast 17°C	03-04/06/14	SB, OW	Clear 12°C	10-11/06/14	SB, OW	Clear 13°C
83	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
90	23-24/04/14	SB, OW	Clear 14°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	09-10/06/14	SB, OW	Clear, 12°C
97	23-24/04/14	SB, OW	Clear 14°C	28-29/04/14	SB, OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	09-10/06/14	SB, OW	Clear, 12°C
117	23-24/04/14	SB, OW	Clear 14°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	10-11/06/14	SB, OW	Clear 13°C
119	23-24/04/14	SB, OW	Clear 14°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	10-11/06/14	SB, OW	Clear 13°C
135	24-25/04/14	SB, OW	Clear 13°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	10-11/06/14	SB, OW	Clear 13°C
146	24-25/04/14	SB, OW	Clear 13°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	10-11/06/14	SB, OW	Clear 13°C
181	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
187	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
188	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C

190	No Access	No Access	No Access	No Access	No Access	No Access	29-30/05/14	AK, LM	Cloudy 16°C	No Access	No Access	No Access
191	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
192	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
219	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
220	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
227	24-25/04/14	SB, OW	Clear 13°C	29-30/04/14	SB, OW	Overcast 17°C	04-05/06/14	SB, OW	Clear 13°C	10-11/06/14	SB, OW	Clear 13°C
291	23-24/04/14	SB, OW	Clear 14°C	28-29/04/14	SB,OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	09-10/06/14	SB, OW	Clear, 12°C
292	23-24/04/14	SB, OW	Clear 14°C	28-29/04/14	SB,OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	09-10/06/14	SB, OW	Clear, 12°C
305	23-24/04/14	SB, OW	Clear 14°C	28-29/04/14	SB,OW	Overcast 11°C	03-04/06/14	SB, OW	Clear 12°C	09-10/06/14	SB, OW	Clear, 12°C
319	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
320	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C
321	24-25/04/14	SB, OW	Clear 13°C	30/04/14 – 01/05/14	SB/OW	Overcast 13°C	29-30/05/14	AK, LM	Cloudy 16°C	11-12/06/14	SB,OW	Cloudy 14°C

Notes: Lead surveyors were Anton Kattan MCIEEM (an accredited agent on licence no. 41533:OTH:SA:2012) and Stephanie Boocock MCIEEM (licence no 44222: OTH: SA:2013) assisted by Leanda Morrison and Owain Waters

Air temperature and weather is that recorded during evening visit.

Table 1b: Lot 1 – Results

No.	No. Traps	Veg./ Turb.	Survey 1				Survey 2				Survey 3				Survey 4			
			Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net
1	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	20	T=2	2fLh, 3mLh	5Lv/Lh, 1Lv/Lh(i)	Lv/Lh	1mLh	2mLv, 6m1f1(i)Lh	6Lv/La	Lv/Lh	1mLv, 3mLh	1mLv, 1m3f1(i)Lh	1Lv/Lh	0	2fLv, 1f1(i)Lh	1m2fLv, 3m2f1(i)Lh	0	0	0
11	12-20	T=2	0	2Lv/Lh	N/A	0	1m2fLv	7Lv/Lh, 10+Rt(i)	N/A	2fLv	2mLv, 10+Rt(i)	3Lv/Lh, 1Rt	N/A	1mLv, 1Rt, 15(i)Rt	0	20Rt	N/A	0
12	20-30	T=1-2	1mLv, 10+Rt(i)	3Lv/Lh	0	0	2fLv, 10+Rt(i)	2Lv/Lh, 10+Rt(i)	0	0	1m1fLv, 1Rt	4Lv/Lh, 20Rt	N/A	N/A	0	0	0	N/A
13	20-30	T=1-2	10+Rt(i)	2Lv/Lh	N/A	N/A	0	3Lv/Lh, 1Rt	N/A	N/A	1mLv, 10+Rt(i)	2Lv/Lh, 10+Rt(i)	N/A	N/A	1fLv, 10+Rt(i)	10+Rt(i)	N/A	N/A
19	12-17	T=1-3	0	2Lv/Lh	0	1Rt	2mLv, 10+Rt(i)	1Lv/Lh, 1Rt	Lv/Lh, Rt	1Rt, 10+Rt(i)	1mLv, 10+Rt(i)	2Lv/Lh, 2Rt	Lv/Lh	2m, 1fLv, 5Rt	10+Rt(i)	0	0	0
27	16-19	T=2-4	1fLh	5Lv/Lh, 1Rt	N/A	8Rt(i)	2mLh	3Lv/Lh	N/A	N/A	1f1mLh	1Lv/Lh	N/A	N/A	0	0	0	N/A
28	32-50	T=1-2	10+Rt(i)	10+Rt(i)	N/A	10+Rt(i)	0	10+Rt(i)	N/A	N/A	10+Rt(i)	0	N/A	N/A	10+Rt(i)	N/A	N/A	N/A
34	30	V=3 T=2-3	1mLv, 1fLv	0	0	N/A	0	1Bb	0	N/A	0	0	0	N/A	0	0	0	N/A
43	0	V=2-4 T=2-3	0	10+ fish	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	N/A	1Rt(i)	N/A	N/A
56	10	V=1-2 T=3-5	0	0	0	N/A	10+ fish	0	0	N/A	0	0	0	N/A	0	0	0	N/A
64	0	V=1-3 T=1-2	N/A	0	N/A	N/A	N/A	1RT(i)	N/A	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A
83	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
90	-	V=1-4 T=1-4	0	0	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A
97	5	V=4-5 T=2-3	0	0	0	N/A	10+ fish	0	0	N/A	0	0	0	N/A	0	0	0	N/A

117	15	V=1-4 T=3-4	1fLv, 1Rt	0	0	N/A	1mLv	0	0	N/A	0	0	0	N/A	0	N/A	0	10+fish
119	15	V=3-4 T=2-4	1mLv, 10 +Rt(i)	0	0	N/A	1Rt, 1Bb	1Bb	0	N/A	0	0	0	N/A	0	N/A	0	0
135	15	V=2-4 T=2-4	mLv(i)	10+Rt (i)	0	N/A	1mLv, 1fLv	1fLv	0	N/A	0	1Rt	0	N/A	0	N/A	0	0
146	30	V=1-4 T=1-4	0	10+ Rt(i) & Bb(i)	0	N/A	1Rt	1Rt	0	N/A	0	0	0	N/A	0	N/A	0	0
181	10	V=2-3 T=1-2	0	0	0	N/A	0	0	0	N/A	0	0	0	0	0	N/A	0	0
187	10	V=2-5 T=1-3	0	0	0	N/A	10+Rt(i)	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
188	20	V=2-5 T=1-2	0	0	0	N/A	0	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
190	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
191	15	V=3-5 T=0-2	0	0	0	N/A	0	0	0	N/A	0	0	N/A	0	0	0	N/A	0
192	15	V=2-5 T=0-1	0	0	0	N/A	0	0	0	N/A	0	0	N/A	N/A	0	N/A	0	0
219	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
220	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
227	10	V=1-3 T=1-4	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A
291	20	V=2-4 T=2-3	0	0	0	N/A	10+ fish	0	0	N/A	0	0	0	N/A	1Bb(i)	0	0	N/A
292	10	V=3-5 T=1-2	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A
305	10	V=1-3 T=1-4	0	0	0	N/A	2mLv, 10+fish	0	0	N/A	0	0	0	N/A	0	1Lv	0	N/A
319	10	V=2-4	0	0	0	N/A	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A

		T=1-3																
320	15	V=2-4 T=1-3	0	0	0	N/A	0	0	0	N/A	0	N/A	N/A	0	0	0	0	N/A
321	20	V=1-2 T=4	0	0	0	N/A	0	0	0	N/A	0	N/A	N/A	0	NA	NA	NA	NA

Key: Lv- *Lissotriton vulgaris*; Lh – *Lissotriton helveticus*; Rt – *Rana temporaria*; Bb – *Bufo bufo*; (i) – immature/efts/tadpoles; m – male; f – female

Vegetation cover score (0-5); 0 = no vegetation obscuring survey; 5 = water completely obscured by vegetation.

Turbidity score (0-5): 0 = completely clear; 5 = very turbid.

NA – No Access

Limitations to Results

- 3.2 All surveys were carried out at an optimal time of year and in appropriate weather conditions as specified in the guidance (English Nature 2001). However there were limitations to the surveys with respect access and applicability of the survey methods in some cases. Table 1c details the constraints that were encountered.

Table 1c: Lot 1- Survey Constraints

Water body	Constraint	Reason
1	No access – not surveyed	Access not granted by owner
12	Only 2 methods used on Survey 3	Steep-sided reen - netting and egg searching too dangerous when water level low.
13	Only 2 methods used	Steep-sided reen – access not possible for egg-searching or netting.
27	Only 2 methods used for Surveys 2 and 3	Steep-sided reen - netting and egg searching too dangerous when water level low.
28	Only 2 methods used for Surveys 2 and 3 and 1 method for Survey 4	Steep-sided heavily scrubbed reen – access too dangerous.
43	Only 1 method used for last 3 surveys	Steep-sided reen – access too dangerous for egg-searching, bottles or netting.
64	Only 1 method used	Steep-sided reen – access too dangerous for egg-searching, bottles or netting.
83	No access – not surveyed	Banks of reen overgrown and totally inaccessible.
90	Only 1 method used for last 3 surveys	Steep-sided reen – access too dangerous for egg-searching, bottles or netting.
187	Only 2 methods used for Survey 3	Water level low and vegetation too dense to torch and net.
188	Only 2 methods used for Survey 3	Water level low and vegetation too dense to torch and net.
190	No access – not surveyed	Land-owner did not permit access to land where his cows were present, which prevented access to this reen.
192	Only 2 methods used for Survey 3	Water level low and vegetation too dense to torch and net.
219	No access – not surveyed	Land-owner did not permit access to land where his cows were present, which prevented access to this reen.
220	No access – not surveyed	Land-owner did not permit access to land where his cows were present, which prevented access to this reen.
319	Not surveyed on Survey 3 and only 1 method used on Survey 4.	Steep-sided heavily scrubbed reen – access too dangerous.
320	Only 2 methods used for Survey 3	Steep-sided heavily scrubbed reen – access too dangerous.
321	Only 2 methods used for Survey 3 no access Survey 4.	Too turbid for effective torching. Cows prevented access for Survey 4 (see note on Reen 190).

4 Results – Lot 2

4.1 No great crested newts were found in any of the water bodies surveyed in Lot 2. Table 2a provides details of the survey dates, surveyors and weather conditions. Table 2b shows the results of the survey..

Table 2a: Lot 2 – Survey Details

No.	Survey 1			Survey 2			Survey 3			Survey 4		
	Date	Surveyors	Weather	Date	Surveyors	Weather	Date	Surveyors	Weather	Date	Surveyors	Weather
379	30/04/14 -01/04/14	AK, LM	Overcast 14°C	08-09/05/14	AK, LM	Overcast 13°C	14-15/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
394	30/04/14 -01/04/14	AK, LM	Overcast 14°C	08-09/05/14	AK, LM	Overcast 13°C	14-15/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
397	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
399	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
400	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
402	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
405	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
406	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
419	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
420	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
430	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
431	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
441	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
442	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
443	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
444	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
445	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	13-14/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
464	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access	No Access
476	30/04/14 -01/04/14	AK, LM	Overcast 14°C	08-09/05/14	AK, LM	Overcast 13°C	14-15/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
481	30/04/14 -01/04/14	AK, LM	Overcast 14°C	08-09/05/14	AK, LM	Overcast 13°C	14-15/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C
487	29-30/04/14	AK, LM	Overcast 14°C	07-08/05/14	AK, LM	Overcast 10°C	14-15/05/14	AK, LM	Overcast 16°C	28-29/05/14	AK, LM	Overcast 13°C

Notes: Lead surveyors were Anton Kattan MCIEEM (an accredited agent on licence no. 41533:OTH:SA:2012) and Stephanie Boocock MCIEEM (licence no 44222: OTH: SA:2013.) assisted by Leanda Morrison and Owain Waters. Air temperature and weather is that recorded during evening visit.

Table 2b: Lot 2 – Results

No.	No. Traps	Veg./ Turb.	Survey 1				Survey 2				Survey 3				Survey 4			
			Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net	Bottle	Torch	Egg	Net
379	15-20	T=1	0	0	0	0	0	1f,1mLv/Lh	0	0	0	0	0	0	1mLv	0	0	0
394	7-8	T=2	0	10Rt(i)	N/A	2Rt(i)	0	5Rt	N/A	1Rt	0	0	N/A	0	0	0	N/A	0
397	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
399	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
400	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
405	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
406	20	T=1	1mLv,10+Rt(i)	0	N/A	0	1fLv,2m1fLh,1Rt	N/A	N/A	2mLv,1mLh,10+Rt(i)	1m2fLv,1fLh,10+Rt(i)	N/A	N/A	1mLv,1mLh,10+Rt(i)	1mLv,1fLh	N/A	N/A	2mLv
419	15-18	T=1-2	0	0	0	0	1mLv	1Rt	0	1fLv,1Rt	1mLv	0	0	1mLv	2mLv	2Lv/Lh	0	1Rt
420	10	T=2	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0	0	0	N/A	0
430	20-23	T=1	1m1fLv,	6Lv/Lh	N/A		3m,1(i)Lv	4Lv/Lh	N/A	1fLv	2mLv	4Lv/Lh	N/A	1fLv	1fLv	7Lv/Lh	N/A	0
431	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
441	24-26	T=2	1mLv,10+Rt(i)	4Lv/Lh,2Rt	0	10+Rt(i)	1fLv,1Rt	2Lv/Lh,2Rt	0	1mLv,10Rt(i)	2FLv,1mLh,1Rt	3Lv/Lh,2Rt	N/A	1mLv	1mLv,2f1mLh,3Rt	2Lv/Lh	N/A	1m1fLv
442	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
443	20	T=2	1mLv	5Lv/Lh,10+Rt(i)	0	N/A	1fLv,10+Rt(i)	3Lv/Lh,10+Rt(i)	0	N/A	2mLv,10+Rt(i)	2Lv/Lh,10+Rt(i)	0	N/A	2mLv	3Lv/Lh	0	N/A
444	5-7	T=1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
445	13-20	T=1-2	4m1fLv	0	0	N/A	3m2fLv	1Lv/Lh	0	N/A	2m2fLv	2Lv/Lh	0	N/A	5m3fLv	4Lv/Lh	0	N/A
464	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
476	15	T=3-4	4m2f1(i)Lv	1Lv/Lh	N/A	N/A	2mLv,2mLh	1Lv/Lh	N/A	N/A	3mLv,1fLh	1Lv/Lh	N/A	N/A	6m1fLv	0	N/A	N/A
481	0	T=1	N/A	1Lv/Lh	N/A	N/A	N/A	0	N/A	N/A	N/A	1Lv/Lh	N/A	N/A	N/A	2Lv/Lh	N/A	N/A

487	0	T=1	N/A	2Rt	N/A	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Key: Lv- *Lissotriton vulgaris*; Lh – *Lissotriton helveticus*; Rt – *Rana temporaria*; Bb – *Bufo bufo*; (i) – immature/efts/tadpoles; m – male; f – female

Vegetation cover score (0-5); 0 = no vegetation obscuring survey; 5 = water completely obscured by vegetation.

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Limitations to Results

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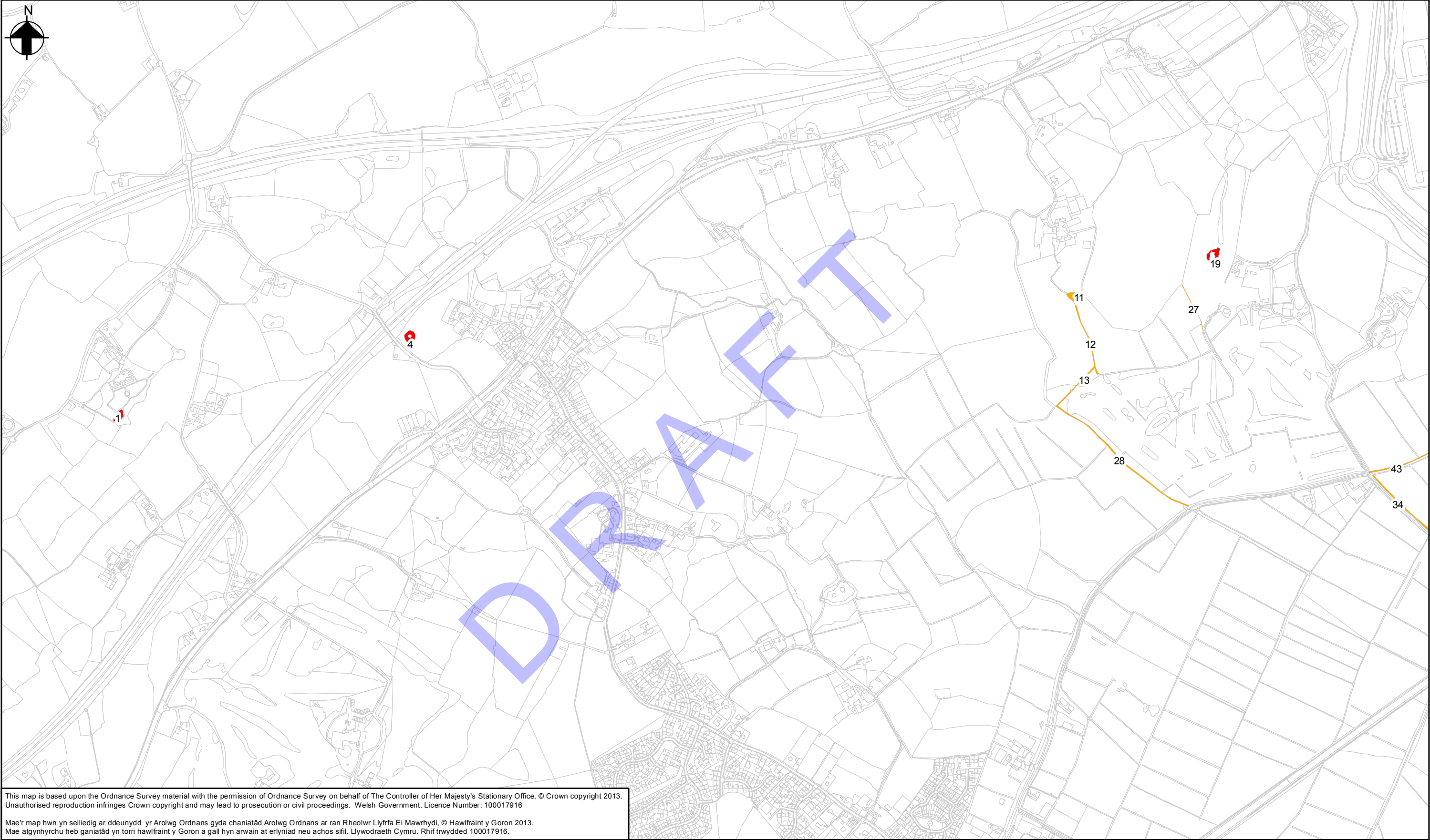
Table 2c: Lot 2- Survey Constraints

Water body	Constraint	Reason
397	No access – not surveyed	Reen inaccessible due to dense scrub
399	No access – not surveyed	Access not granted by owner
400	No access – not surveyed	Reen inaccessible due to dense scrub
402	No access – not surveyed	Reen inaccessible due to dense scrub
405	No access – not surveyed	Reen inaccessible due to dense scrub
406	Only 2 methods used for last 3 surveys	Steep-sided reen – access too dangerous for egg-searching and netting.
431	No access – not surveyed	Access not granted by owner
442	No access – not surveyed	Access not granted by owner
464	No access – not surveyed	Reen inaccessible due to dense scrub
476	Only 2 methods used for last 2 surveys	Steep-sided heavily scrubbed reen – access dangerous and difficult.
481	Only 1 method used	Steep-sided reen – access too dangerous.
487	Only 2 methods used for first 2 surveys and surveys 2 and 3 not carried out.	Initially too shallow for effective survey, later dried up completely.

5 References

English Nature (2001) Great Crested Newt Mitigation Guidelines. EN, Peterborough.

6 Appendix 1: Figures



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HSIScores

- Unsuitable
- Poor
- Below average
- Average
- Good

P0	2014-03-07	PW	PW	PC
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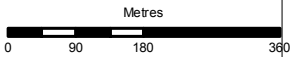
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Drawing Title

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Lot 1 - Sheet 1

Job No

117300-01

Drawing Status

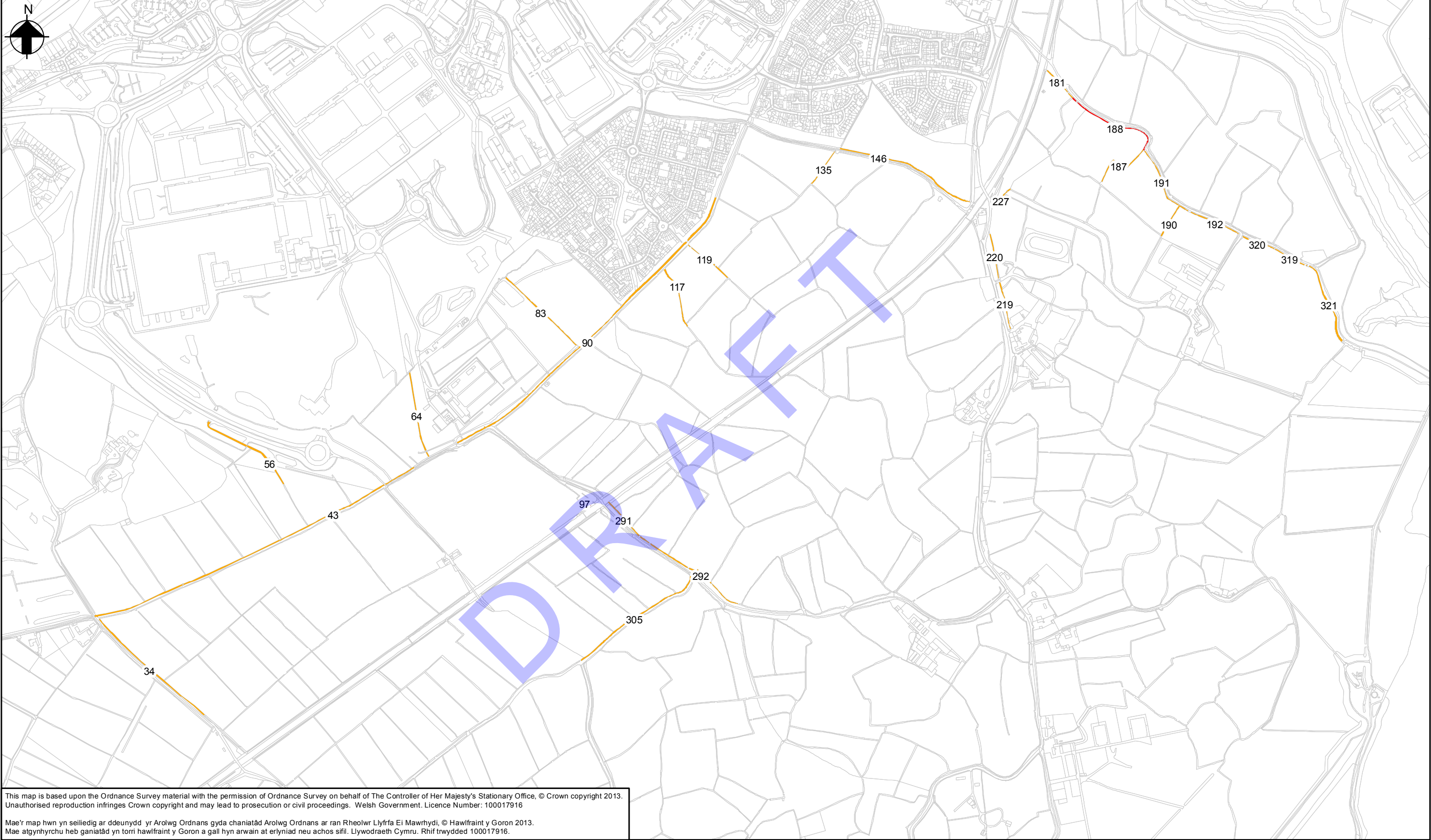
Preliminary

Drawing No

101

Issue

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- HSIScores
- Unsuitable
 - Poor
 - Below average
 - Average
 - Good

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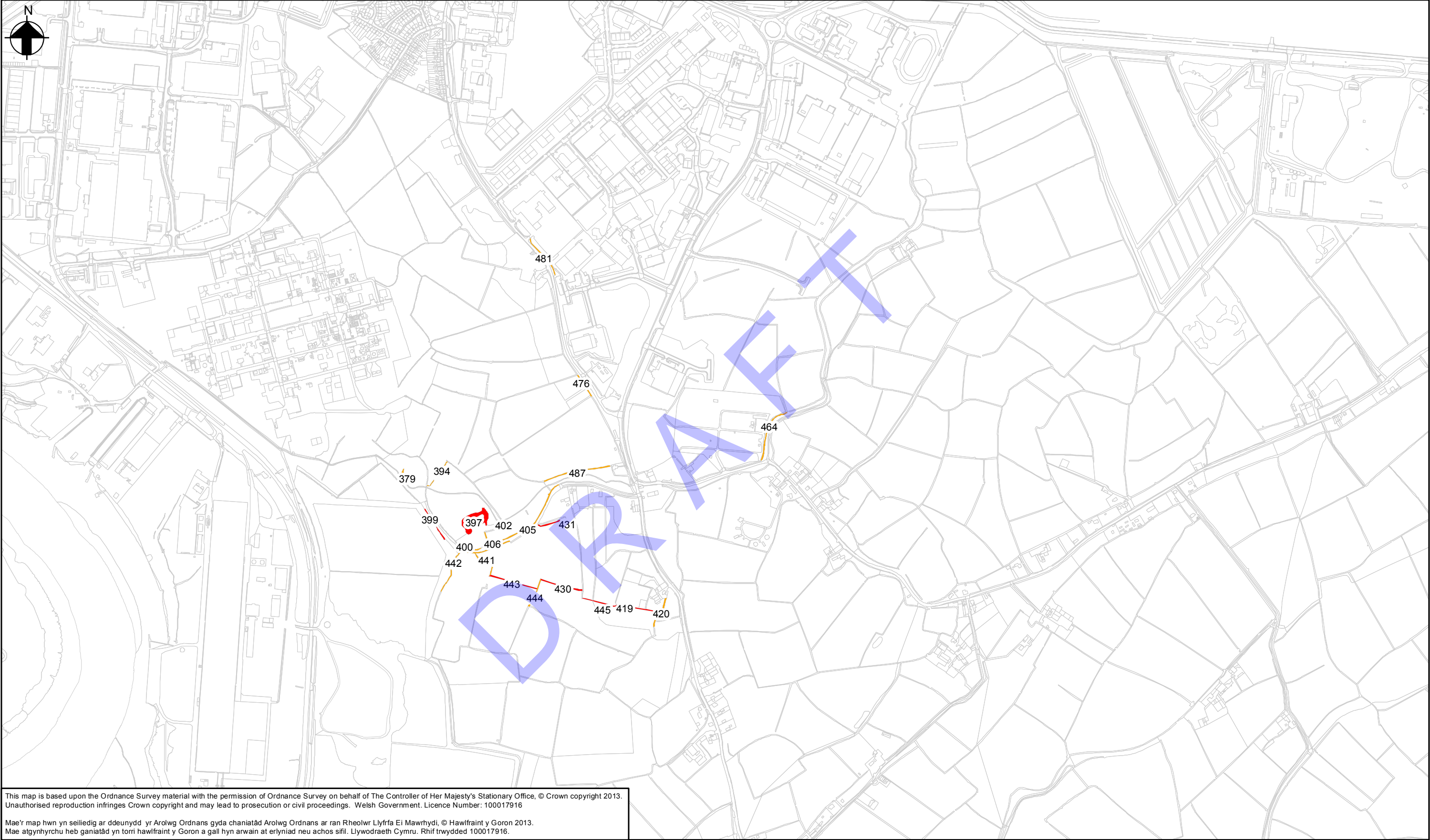
**Tranche 1 Waterbodies for
Amphibian Surveys
Lot 1 - Sheet 2**

Job No
117300-01

Drawing Status
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Drawing No
102

Issue
P0




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Drawing Title

**Tranche 1 Waterbodies for
Amphibian Surveys
Lot 2 - Sheet 1**

Job No
117300-01

Drawing Status
Preliminary

Drawing No
201

Issue
P0

Appendix C

Ecosulis Report 2014

LOT 3, M4 CORRIDOR, NEWPORT

Great Crested Newt Surveys

Client: ARUP

Reference: J005401

Date: June 2014

Issue:	Date:	Author/Amended by:	Reviewed/Approved by:
One	26 June 2014	FrB	TW
Two	17 July 2014	SK	SK
Three	8 October 2014	-	SK

Company Registration Number: 372 4176
VAT Number: 601216305



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NON-TECHNICAL SUMMARY

Site location and size	Whitson to Magor
Scope of Works	Great crested newt presence/absence surveys
Purpose of Works	To inform proposals for the M4 corridor around Newport.
Dates of site visits and names of surveyors	Surveys were led by Matt Levan; 24 April 2014 to 29 May 2014
Overview	No great crested newts were recorded within the waterbodies surveyed, indicating that great crested newts are likely to be absent from these waterbodies. Smooth and palmate newts were recorded within four of the water bodies surveyed.
Recommendations for further surveys	No recommendations for further surveys of these waterbodies.

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	Nomenclature	1
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1 INTRODUCTION

1.1 In March 2014, Ecosulis was commissioned by Arup to undertake great crested newt surveys of waterbodies between Whitson and Magor as shown on Figure 1. The purpose of the surveys was to inform proposals for the M4 corridor around Newport and any future EIA of a motorway to the south of Newport.

1.2 Matt Levan, an experienced and licenced great crested newt surveyor representing Ecosulis visited the area between 24 April 2014 and 29 May 2014 to undertake the surveys.

Objectives of Study

1.3 The objectives of this study were: to provide information on the existing ecological conditions at the site with regards to great crested newts; to identify potential constraints and opportunities that great crested newts may pose to any scheme; and to identify further ecological studies that may be required to ensure that great crested newts are fully considered within the proposals.

General Description of Site

1.4 The study area is a stretch of land between Whitson and Magor, located within rural habitats dominated by improved grassland fields, bounded by a network of ditches (reens) with hedgerows and standard trees.

1.5 The study area is located within Monmouthshire, approximately 10 miles east of Newport.

Nomenclature

1.6 The common name only of flora and fauna species is given in the main text of this report; however, Latin names are used for species where no common name is available. A full list of all species recorded on site during the surveys is given in Appendix I with their Latin names. All plant names follow the nomenclature of Stace (2010).

2 METHODS

Great Crested Newt Presence/Absence Survey

2.1 In order to determine presence, the Great Crested Newt Mitigation Guidelines (English Nature 2001) requires three survey techniques to be employed where possible, including; bottle-trapping, torch searches and egg searches.

2.2 Four data sets are required to determine presence or likely absence of great crested newts (English Nature 2001). The eight site visits required to obtain these data sets were undertaken between 24 April 2014 and 29 May 2014, which falls within the aquatic phase of the great crested newt life cycle (mid-March to mid-June). The visits were undertaken when the temperature was consistently above 5°C and when the night-time weather was suitable, i.e. little or no wind and rain. The water bodies surveyed are shown on Figure 2.

Net Searches

2.3 Searches of the water bodies were conducted using a long-handled dip-net. The perimeter was walked and the net agitated through aquatic vegetation in a two-metre arc.

Torch Searches

2.4 Searches of the water bodies were conducted by torch light at night. The perimeters were walked slowly and searched using a 1,000,000-candlepower lamp (operated off a 12V battery). Any newts sighted within the torch beam were identified to species and gender, where possible, counted and recorded. Other amphibians were also recorded.

Bottle-trapping

2.5 Bottle-traps constructed from two-litre plastic bottles were secured around the margins of each pond at intervals of approximately 2m. Bottles were angled to allow for a bubble of air. The traps were left overnight and checked the following morning. Any newts found were identified to species and gender, counted and recorded before being released. Other amphibians were also recorded.

Egg Searches

2.6 Aquatic and marginal vegetation (and other suitable substrates) were searched for the presence of great crested newt eggs. Once eggs were found and identified to species, no further egg searches were undertaken within that water body. The presence of eggs of other species of amphibian was also noted.

Refuge searches

2.7 Existing refuges such as logs, tarpaulin, paving slabs, wooden planks and debris within the terrestrial habitats immediately surrounding the ponds were lifted and searched underneath. Any newts found were identified to species and gender, counted and recorded before being released. Other amphibians were also recorded.

Personnel

- 2.8 All surveys were undertaken by experienced representatives of Ecosulis, led by Matt Levan, working under a Natural Resources Wales Great Crested Newt survey licence (licence reference 47638:OTH:SA:2013).

3 RESULTS

Great Crested Newt Presence/Absence Survey

- 3.1 Information regarding survey methods, air temperature and the torch power utilised for each site visit is detailed within Appendix II.
- 3.2 Referring to Table 2 below, the method of bottle-trapping recorded no great crested newt presence. Low numbers of smooth newts were recorded within four water bodies and palmate newts were also recorded within one of these water bodies. Common toad tadpoles and common frog tadpoles were also noted within two water bodies. It was not always possible to bottle trap ponds due to changeable water levels and health and safety considerations.
- 3.3 Referring to Table 3 below, the method of torch searching recorded no great crested newts within the water bodies. Common toads were recorded within one pond during torch searches.
- 3.4 Referring to Table 4 below, the method of net searching recorded no great crested newts within the water bodies.
- 3.5 Additionally, egg searches were undertaken during which no newt eggs were recorded.
- 3.6 Where it was not possible to undertake three of the preferred methods above it was necessary to carry out terrestrial refuge searches. A juvenile palmate newt was found at pond 1170 on three separate occasions (12 May, 18 May and 24 May). A juvenile palmate newt was also found at pond 678 on one occasion (10 May).

Table 1: Great Crested Newt Bottle-trapping Results, 2014

Water Body	Site Visit																		Maximum GCN Count	Field Observations Maximum Count
	April 2014		May 2014																	
	24	25	1	2	3	10	11	12	17	18	20	22	23	24	25	27	28	29		
540			0			0			-		-								0	-
571									2 SN		0		0			0			0	3 Toads, Toad Tadpoles
586				0			1 SN		0		2SN								0	-
651	0						0			0		0							0	-
672		0										0			0		0		0	-
675		1 SN													0		3SN	0	0	Common Frog Tadpoles
676	2 SN						0			0		1SN 1PN							0	-
677	0											0	0			0			0	-
678						-		-					-		-				-	-
760					-			-					-			-			-	-
1170	-							-		-				-					-	-
1342	-		-							-				-					-	-
1344	-				-			-						-					-	-
Key	- = no survey undertaken SN = Smooth Newt																			

Table 2: Great Crested Newt Torch Search Results, 2014

Water Body	Site Visit																		Maximum GCN Count	Field Observations Maximum Count
	April 2014		May 2014																	
	24	25	1	2	3	10	11	12	17	18	20	22	23	24	25	27	28	29		
540			0			0			0		0								0	-
571									0		0		0			0			0	-
586				0			0		0		0								0	-
651	0						0			0		0							0	-
672		0										0			0		0		0	-
675		0													0		-	-	0	-
676	0						0			0		0							0	-
677	0											-	-			-			-	-
678						0		0					0		0				0	-
760					0			0					0			0			0	-
1170	0							0		0				0					0	-
1342	0		0							0				0					0	-
1344	0				0			0						0					0	-
Key	- = no survey undertaken																			

Table 3: Great Crested Newt Net Search Results, 2014

Water Body	Site Visit																		Maximum GCN Count	Field Observations Maximum Count
	April 2014		May 2014																	
	24	25	1	2	3	10	11	12	17	18	20	22	23	24	25	27	28	29		
540			0			0			0		0								0	-
571									-		-		-			-			-	-
586				0			0		0		0								0	-
651	-						-			-		-							-	-
672		-										-			-		-		-	-
675		-													-		0	0	0	-
676	-						-			-		-							-	-
677	-											-	0			0			0	-
678						-		-					-		-				-	-
760					-			-					-			-			-	-
1170	-							-		-				-					-	-
1342	-		-							-				-					-	-
1344	0				0			0						0					0	-
Key	- = no survey undertaken																			

Table 4: Great Crested Newt Refuge Search Results, 2014

Water Body	Site Visit																		Maximum GCN Count	Field Observations Maximum Count
	April 2014		May 2014																	
	24	25	1	2	3	10	11	12	17	18	20	22	23	24	25	27	28	29		
540			-			-			0		0								0	-
571									0		0		0			0			-	-
586				0			0		0		0								-	-
651	-						-			-		-							-	-
672		0										0			0		0		-	-
675		-													-		-	-	-	-
676	0						0			0		0							-	-
677	-											-	-			-			0	-
678						0		0					0		0				0	-
760					0			0					0			0			0	-
1170	0							0		0				0					0	-
1342	0		0							0				0					0	-
1344	0				0			0						0					0	-
Key	- = no survey undertaken																			

4 CONCLUSIONS

- 4.1 This section provides considerations in relation to the ecology of the study area and any adjacent habitats that should be considered within development proposals to ensure that impacts on ecology are avoided and / or mitigated within the scheme.

Great Crested Newts

- 4.2 Great crested newt is protected under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2010) from deliberate capture, injury and killing, intentional or reckless disturbance, intentional or reckless obstruction of access to any structure or place which any such animal uses for shelter or protection, and deliberate damage or destruction of a breeding site or resting place. Common toad is a UK BAP species and is a material consideration in respect to planning issues.

- 4.3 No great crested newts were recorded during the surveys at any water body, indicating likely absence of great crested newts from the area.

Smooth and Palmate Newts

- 4.4 There is no special protection afforded to smooth or palmate newts. Low numbers of smooth newts were recorded within water bodies 571, 586, 675 and 676 during the survey.

- 4.5 Individual palmate newts was recorded within water bodies 676 and 1170.

Common Frogs and Toads

- 4.6 There is no special protection afforded to common frogs or common toads, however, common toads are a UK BAP species.

- 4.7 Common frog tadpoles were recorded within water body 675, indicating the use of this water body for breeding frogs.

- 4.8 Low numbers of common toads and tadpoles were recorded within water body 571, indicating the use of this water body for breeding toads.

5 LIMITATIONS OF SURVEY AND REPORT

- 5.1 This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any plants or animals that may appear at other times of the year and were therefore not evident at the time of visit. Some species that might use the site or be apparent at other times of year, or only in certain years, would not have been detected.
- 5.2 Variations in the quality of the water bodies during the survey period can affect the success of the survey methods used and may influence the results. This was seen during the surveys due to changing water levels and vegetation cover.
- 5.3 Access to water bodies included in the scope of the surveys, was limited in some areas, and not all water bodies within the original scope could be surveyed. The waterbodies that have been surveyed are shown on figure 2.
- 5.4 There were several limitations on the survey methods used. The surveys were still undertaken in accordance with best practice, with three survey methods used for the majority of water bodies. These are summarised for each water body in table 4 below.

Table 4: Limitations summary

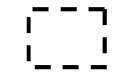
Water body	Limitations
540	Three preferred survey methods used for the first survey. Net search substituted with terrestrial search during second visit. Only able to undertake egg search, torching and terrestrial search during final two visits due to low water levels.
571	Unable to undertake net searches, therefore a terrestrial search was undertaken.
586	50m of the ditch not accessed due to aggressive dogs adjacent to the ditch.
651	Tall vegetation and steep banks limited torching area.
672	No limitations
675	Torching limited by dense bramble on the banks and dense reeds in the channel. Bottle trap numbers limited by shallow water.
676	No limitations
677	Water level rose after heavy rain, limiting bottle trap numbers during survey on 27 May 2014.

Water body	Limitations
678	No land access possible into the ditch, therefore torch and refuge search only possible. Egg search, bottle trapping and net search was not possible due to access restrictions to the water body.
760	Water level limited access for bottle trapping or netting, refuge search undertaken instead.
1170	Steep banks are present, therefore access into the channel is not possible. As a result, torch searches and refuge searches were undertaken.
1342	Steep banks are present, therefore access into the channel is not possible. As a result, torch searches and refuge searches were undertaken.
1344	Tall vegetation and steep banks limited access for all methods apart from torching during the first visit. Net searches and refugia searches were undertaken during the survey visits.

- 5.5 The behaviour of animals can be unpredictable and may not conform to standard patterns recorded in current scientific literature. This report therefore cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.
- 5.6 The advice contained in this report relate primarily to factual survey results and general guidance only. On all legal matters you are advised to take legal advice.



Key



Survey Area

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Title	GCN Survey Overview Map	
Date	Scale	Figure
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Key

 Ditch

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Client	ARUP	
Project	Lot 3, M4 Corridor, Newport	
Title	Great Crested Newt Survey Map	
Date	Scale	Figure
July 2014	SCHEMATIC ONLY	2

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Appendix I: SPECIES LIST

Fauna	
Common Name	Latin Name
Common Frog	Rana temporaria
Common Toad	Bufo bufo
Smooth Newt	Lissotriton vulgaris
Palmate Newt	Lissotriton helveticus

Appendix II: GREAT CRESTED NEWT SURVEY INFORMATION

Table 1: Great Crested Newt Survey Information: Pond 540

Date	Visit	Air temp.	Weather	Methods used	Torch power
1 May 2014	1	14.5°C	Overcast, Drizzle	bt, es, ts	1,000,000cp
10 May 2014	2	13.5°C	Overcast	bt, es, ts	1,000,000cp
17 May 2014	3	19.0°C	Warm, Sunny	es, ts, rs	1,000,000cp
20 May 2014	4	14.5°C	Occasional Rain	es, ts, rs	1,000,000cp

Table 2: Great Crested Newt Survey Information: Pond 571

Date	Visit	Air temp.	Weather	Methods used	Torch power
17 May 2014	1	19.0°C	Warm, Sunny	bt, es, ts	1,000,000cp
20 May 2014	2	16.5°C	Occasional Rain	bt, es, ts	1,000,000cp
23 May 2014	3	12.0°C	Occasional rain	bt, es, ts	1,000,000cp
27 May 2014	4	16.5°C	Overcast	bt, es, ts	1,000,000cp

Table 3: Great Crested Newt Survey Information: Pond 586

Date	Visit	Air temp.	Weather	Methods used	Torch power
2 May 2014	1	11.5°C	Overcast	bt, ts, ns	1,000,000cp
11 May 2014	2	8.5°C	Rain	bt, ts, ns	1,000,000cp
17 May 2014	3	19°C	Warm, sunny	bt, ts, ns	1,000,000cp
20 May 2014	4	16.5°C	Occasional Rain	bt, ts, ns	1,000,000cp

Table 4: Great Crested Newt Survey Information: Pond 651

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after Rain	bt, es, ts	1,000,000cp
11 May 2014	2	8.5°C	Rain	bt, es, ts	1,000,000cp
18 May 2014	3	19.0°C	Warm, Sunny	bt, es, ts	1,000,000cp
22 May 2014	4	12.5°C	Occasional Rain	bt, es, ts	1,000,000cp

Table 5: Great Crested Newt Survey Information: Pond 672

Date	Visit	Air temp.	Weather	Methods used	Torch power
25 April 2014	1	9.5°C	Rain	bt, es, ts	1,000,000cp
22 May 2014	2	12.5°C	Occasional Rain	bt, es, ts	1,000,000cp
25 May 2014	3	12.0°C	Occasional Rain	bt, es, ts	1,000,000cp
28 May 2014	4	15.5°C	Overcast	bt, es, ts	1,000,000cp

Table 6: Great Crested Newt Survey Information: Pond 675

Date	Visit	Air temp.	Weather	Methods used	Torch power
25 April 2014	1	9.5°C	Rain	bt, es, ts	1,000,000cp
25 May 2014	2	12.0°C	Occasional Rain	bt, es, ts	1,000,000cp
28 May 2014	3	15.5°C	Overcast	bt, es, ns	1,000,000cp
29 May 2014	4	12.5°C	Intermittent rain	bt, es, ns	1,000,000cp

Table 7: Great Crested Newt Survey Information: Pond 676

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after rain	bt, es, ts	1,000,000cp
11 May 2014	2	8.5°C	Rain	bt, es, ts	1,000,000cp
18 May 2014	3	19°C	Warm, Sunny	bt, es, ts	1,000,000cp
22 May 2014	4	12.5°C	Occasional Rain	bt, es, ts	1,000,000cp

Table 8: Great Crested Newt Survey Information: Pond 677

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after rain	bt, es, ts	1,000,000cp
22 May 2014	2	12.5°C	Occasional Rain	bt, es, rs	1,000,000cp
23 May 2014	3	12.0°C	Occasional rain	bt, es, ns	1,000,000cp
27 May 2014	4	16.5°C	Overcast	bt, es, ns	1,000,000cp

Table 9: Great Crested Newt Survey Information: Pond 678

Date	Visit	Air temp.	Weather	Methods used	Torch power
10 May 2014	1	13.5°C	Overcast	ts, rs	1,000,000cp
12 May 2014	2	11.0°C	Rain and high winds	ts, rs	1,000,000cp
23 May 2014	3	12.0°C	Occasional rain	ts, rs	1,000,000cp
25 May 2014	4	12.0°C	Occasional Rain	ts, rs	1,000,000cp

Table 10: Great Crested Newt Survey Information: Pond 760

Date	Visit	Air temp.	Weather	Methods used	Torch power
3 May 2014	1	14.5°C	Dry and sunny	es, ts, rs	1,000,000cp
12 May 2014	2	11.0C	Rain and high winds	es, ts, rs	1,000,000cp
23 May 2014	3	12.0°C	Occasional rain	es, ts, rs	1,000,000cp
27 May 2014	4	16.5°C	Overcast	es, ts, rs	1,000,000cp

Table 11: Great Crested Newt Survey Information: Pond 1170

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after rain	ts, rs	1,000,000cp
12 May 2014	2	11.0°C	Rain and high winds	ts, rs	1,000,000cp
18 May 2014	3	19°C	Warm and sunny	ts, rs	1,000,000cp
24 May 2014	4	12°C	Occasional heavy rain	ts, rs	1,000,000cp

Table 12: Great Crested Newt Survey Information: Pond 1342

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after rain	ts, rs	1,000,000cp
1 May 2014	2	14.5°C	Overcast, Drizzle	ts, rs	1,000,000cp
18 May 2014	3	19°C	Warm, Sunny	ts, rs	1,000,000cp
24 May 2014	4	12°C	Occasional heavy rain	ts, rs	1,000,000cp

Table 13: Great Crested Newt Survey Information: Pond 1344

Date	Visit	Air temp.	Weather	Methods used	Torch power
24 April 2014	1	6.5°C	Overcast after rain	ts, ns, rs	1,000,000cp
3 May 2014	1	14.5°C	Dry, Sunny	ts, ns, rs	1,000,000cp
12 May 2014	2	11.0°C	Rain and high winds	ts, ns, rs	1,000,000cp
24 May 2014	3	12°C	Occasional heavy rain	ts, ns, rs	1,000,000cp

Where bt = bottle trapping; es = egg search; ts = torch search; ns= netting; rs = refuge search