

GREAT CRESTED NEWT REPORT – USKMOUTH POWER STATION

On behalf of SIMEC Atlantis Energy



ECO00312 Uskmouth Power
Station
Great Crested Newt Report
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1 INTRODUCTION

- 1.1.1 RPS were commissioned by Simec Energy Atlantic Ltd to undertake surveys to establish the presence or likely absence of great crested newts (GCN), at Uskmouth Power Station located near Nash South Wales, with the site centred on the Ordnance Survey grid reference SN141 072.
- 1.1.2 Surveys included a scoping assessment of the three ponds and two drains and two ditches within the power station site. Off-site waterbodies were also considered in the scoping assessment. Subsequently a GCN presence/absence (population) survey was undertaken for three ponds, two drains and two ditches, all on-site, in spring 2019.

1.2 Local Status

- 1.2.1 The desk study undertaken for the Preliminary Ecological Appraisal included 14 records of GCN, the most recent recorded in 2017, within a 2km radius of the site boundary. A GCN population is known to be present in the eastern part of the Newport Wetlands reserve over 1km from the boundary of the power station (confirmed by staff at the RSPB Newport Wetlands Centre).

1.3 Legislation

- 1.3.1 GCN, and their breeding/resting places, are protected under; the EU Habitats Directive (transposed into UK law as the Conservation of Species and Habitats Regulations 2010), and the Wildlife and Countryside Act 1981 (as amended). Together these protect GCN from killing, injury, capture and disturbance, and their breeding/resting places from damage, destruction and obstruction.
- 1.3.2 GCN and the common toad *Bufo bufo* are also Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016 and UK BAP priority species.

2 METHODS

2.1 Habitat Suitability of Waterbodies

- 2.1.1 The waterbodies on site and within 250m of the proposed development area boundary were reviewed as well as the connecting terrestrial habitat between them, to identify waterbodies with the potential to support breeding populations of GCN.
- 2.1.2 Waterbodies on-site or within a relevant distance to the application boundary (with agreed access by landowners) were visited/initially scoped in suitable weather conditions on September 2018.
- 2.1.3 GCN scoping survey covered four ponds (P1, P2, P3, P4), drains/ditches (D1, D2, D3 and D4) and an ephemeral pool in the Laydown Area (P5). Two off site ponds (P6 and P7) were identified within 250m of the proposed development boundary. The location of each is shown on the Waterbody Location Plan (Drawing Number: ECO00312-ECO-011).

2.2 GCN Population Survey

- 2.2.1 A GCN population survey was carried out in the suitable waterbodies on-site. In compliance with best practice guidelines (Gent & Gibson, 2003; English Nature, 2001), a combination of the survey techniques, described below, were used to assess the presence or likely absence of GCN and if present, to determine the population size of GCN on-site.

- 2.2.2 Six survey visits were undertaken between mid-March and early June 2019 with three surveys conducted between mid-April and mid-May 2019.
- 2.2.3 Survey visits were undertaken during suitable weather conditions with overnight temperatures always above 5°C (See Table 2.1). Surveys were carried out by GCN licence holder Laura White (NRW licence number S086255/1) accompanied by additional competent surveyors.
- 2.2.4 All waterbodies included within the GCN population survey were found on-site. Three GCN survey techniques were included for the waterbodies identified for the survey:
- **Torchlight Counts** - The surveyors walked around the perimeter of each waterbody approximately 30 minutes after dusk and scanned the water's edge with a high-powered CLU light torch, recording the number of GCN and other amphibians that were present. Additional species of notable interest can also be recorded where present. This is most effective when the pond is not heavily weeded, and the water is clear.
 - **Bottle Trapping** – Aquatic newt traps (consisting of 2L plastic bottles with an inverted lid) were deployed approximately every two metres around the accessible sections of the pond margin in early evening (always before dusk). The traps were suspended on bamboo canes with trapped air bubbles. The traps are then checked early the following morning within 12 hours of being set; with the number of GCN and other amphibians in each trap recorded. This technique is often the most effective where there is sufficient water depth to place out traps.
 - **Egg Searching** - Accessible aquatic vegetation surrounding the waterbody margin were searched for newt eggs. Great crested newt eggs are yellowish and laid individually, usually wrapped within a submerged leaf. Unwrapping eggs can increase mortality rates for GCN and other newt species and once the presence of GCN eggs is confirmed in a pond, this technique is no longer be included during subsequent survey visits.

Table 2.1 Survey and weather descriptions for GCN population survey.

Date	Survey Number	Surveyors	Weather Description
10/04/2019	1	Laura White & Brian Chilcott	Dry, <5% cloud cover, 8-12.5°C, low wind disturbance
17/04/2019		Laura White & Georgia Kelly	Dry, 90% cloud cover, 8-15°C, low wind disturbance
16/04/2019	2	Laura White & Georgia Kelly	Dry, 100% cloud cover, 10-13°C, negligible wind disturbance
01/05/2019		Laura White & Kate Davies	Dry (rain previous day), 90% cloud cover, 8-16.5°C, low wind disturbance
30/04/2019	3	Laura White & Kate Davies	Dry (rain immediately prior to survey) 40% cloud cover, 7-18°C, negligible wind disturbance
09/05/2019		Laura White & Stephen Devereaux	Dry (rain immediately prior to survey), 70% cloud cover, 7-14°C, high wind disturbance
14/05/2019	4	Laura White & Stephen Devereaux	Dry, 5% cloud cover, 8-19.5°C, negligible wind disturbance
15/05/2019		Laura White & Stephen Devereaux	Dry, 5% cloud cover, 7.5-15.5°C, low wind disturbance
30/05/2019	5	Laura White & Courtney Hooper	Dry (rain previous day), 100% cloud cover, 13-15°C, low wind disturbance

Date	Survey Number	Surveyors	Weather Description
31/05/2019		Laura White & Georgia Kelly	Dry, 100% cloud cover, 14-17°C, low wind disturbance
05/06/2019	6	Laura White & Stephen Devereaux	Light rain during start of survey, 95% cloud cover, 12-15°C, low wind disturbance
06/06/2019		Laura White & Stephen Devereaux	Dry (rain previous day), 75% cloud cover, 12-18°C, low wind disturbance

2.3 Limitations & Constraints

- 2.3.1 GCN surveys were completed for waterbodies P1, P2, P3, P5, D1, D2 and D4, all located within site boundary. The access restrictions for each of these waterbodies is detailed in Table 2.2.
- 2.3.2 The eastern section of the boundary ditch (D3) adjoining the Sewage Treatment Works was almost completely enclosed by dense scrub and it was not possible to undertake presence/absence surveys in this channel. Very localised cutting back of ditch side scrub for access in late summer confirmed that the channel had variable water levels with a section that was completely dry.
- 2.3.3 The western section of the boundary ditch (D3) was also partially enclosed by dense scrub and bramble thicket with only localised more open sections. The section of the boundary ditch adjacent to the Coal Storage Area had very steep banks. Localised more open areas supported dense tall herb vegetation, but these sections could not be safely accessed for trapping or torching after the first survey.
- 2.3.4 A further drainage channel (D5) located on southern side of a restored ash mound was dry in both spring and autumn and was classified as unsuitable as breeding habitat for GCN. A widened section of this ditch supports a reedbed with the central part of this habitat growing in the open water (P4). There was no access to the water edge to deploy the traps or undertake torch counts. Water depth at bank side was very shallow, traps would not have been able to be deployed at the edge, which would have resulted walking in the waterbody as well as removing more vegetation to access the deeper part of the pond.
- 2.3.5 There are two off-site ponds located within 250m of the site and neither were accessible for detailed scoping or presence/absence surveys. A pond in the Welsh Water sewage treatment works (P6) is bounded by woodland and lies approximately 25m from the ree/drain on the south-eastern boundary of the power station site. It is possible that the Welsh Water pond has an operational function other than receiving surface water run-off from the operational hardstanding. The potential value of the pond habitats for GCN could not be assessed as part of the survey.
- 2.3.6 The Ash Pond (P7) within Newport Wetlands is a large waterbody with very extensive reedbed and is used by significant numbers of waterfowl. It could be reviewed from a vantage point and was subject to a Habitat Suitability Index assessment

Table 2.2 Constraints for on-site waterbodies.

Waterbody	Constraint
P1	Access was limited to 50% of the bank due to steep edges and thick woody vegetative growth.
P2	Access was limited to 75% of the bank due to thick woody vegetative growth.

P3	Substrate formed of rubble and waste produce from the coal plant, ability to deploy traps with canes was limited. Size of the waterbody limited the time available on each survey to deploy traps, resulting in deployment at every 3-4m rather than 2m. High wind speed on one survey limited the number of traps deployed.
P5	Ephemeral pool - water level too low for bottle trapping
D1	Access to drain was limited due to thick scrub, bramble thicket and woody vegetation. Access limited to 25% for trap deployment and 40% to search with torches. Due to reduced water level in April and May, no traps were deployed on the fourth, fifth and sixth survey.
D2	Access to drain was limited due to thick scrub, bramble thicket and woody vegetation. Access was further limited due to the gradient of the bank and the gap between bank edge and water level. Only able to deploy traps at 5% of length (north and south end). Due to reduced water level in April and May, no traps were deployed on the fifth and sixth survey.
D4	Water level too low for trapping in 30% of the Interceptor Ditch. Due to reduced water level in April and May, reduced number of traps were deployed on the fourth and fifth, no traps were deployed on the sixth survey.

2.3.7 The ditches that were not accessible were generally heavily shaded with relatively shallow water and were considered to have low potential value for breeding GCN. All the higher value waterbodies within the site were covered by the survey and the access limitations are not considered to be a significant constraint on the survey.

3 RESULTS

3.1 Habitat Suitability Index Assessment

3.1.1 A description of the ponds and ditches and survey recommendations is set out in Table 3.1.

Table 3.1 Waterbodies assessment of potential to support GCN.

Name	Description	HSI Score	Further Survey
On-site Waterbodies			
P1	Pond with rubble/stone base with a surface area of approximately 2,130m ² . Reeds present along 40% bank margin, with willow/bramble/buddleia scrub round the bank. 40-50% of bank accessible. Waterfowl present. Large culvert pipe (1.5m height approx.) that joins it with P2.	0.81 Excellent	Yes
P2	Pond with rubble/stone base with a surface area of approximately 363m ² . Reeds present in water (20% cover), with willow/bramble/buddleia scrub set back from the bank. 75% of bank accessible. Waterfowl present. Large culvert pipe (1.5m height approx.) that joins it with P1.	0.86 Excellent	Yes
P3 – Lambys' Lake	Large man-made reservoir (named Lambys' Lake) with a surface area of approximately 10890m ² . Ruderal vegetation round bank margin, 80% accessible, waterfowl and eel present.	0.47 Poor	Yes
P4	Open water section of reedbed, approximately 1,050m ²	0.74 Good	No safe access

P5	Ephemeral pool in Laydown Area	0.61 Average	Yes
D1 (North Drain)	Starting at Julian's Pill, the drain runs southwest through the site, bordering the woodland. The approximate length is 460m with large sections covered or shaded by overgrown bramble, butterfly bush and willow.	0.56 Below Average	Yes
D2 (South Drain)	The drain runs southwest through the site. The approximate length is 560m with some sections covered or shaded by overgrown bramble, butterfly bush and willow, the northern end of the drain is shaded by woodland and connects with Julian's Reen, off-site to the north.	0.61 Average	Yes
D3 (Boundary Ditch – western section)	The ditch runs along the southern boundary of the site. The total length within the site boundary is approximately 1,085m, the majority of which is inaccessible due to dense scrub. Some sections of the channel support dense stands of reed. Waterfowl were present.	0.48 Poor	No access – scrub
D4 (Interceptor Ditch)	The ditch runs the perimeter of a Coal Storage Area within the site boundary, parallel with the boundary ditch (D3) and is approximately 495m in length. The substrate in the base of the ditch is waste coal ash. Reeds is colonising and waterfowl are present.	0.62 Average	Yes
Off-site Waterbodies			
P6	Pond located within sewage treatment works to the northeast of the site with a surface area of approximately 1,080m ² . Surrounded by scrub and young woodland.		Access not permitted.
P7 – Ash Pond	Ash Pond to the south of the site within the Newport Wetlands, with a surface of approximately 17,255m ² . The pond margin consists of a deep reed bed, extending approximately 10-18m into the water before there is access to open water. Significant numbers of waterfowl.	Approx. 0.49 Poor	Deemed not suitable.

3.2 Presence / absence Survey

Great Crested Newt

- 3.2.1 Waterbodies included in the GCN survey were three ponds (P1, P2 and P3) and three drains/ditches holding open water in spring 2019 (D1, D2 and D3). The shallow ephemeral pool (P5) in the Laydown Area was included in the torch and egg search surveys but was never deep enough to deploy bottle traps. 95% of the shallow open water was visible during the torchlight survey. Due to its length, D4 (the interceptor ditch located around the boundary of the Coal Storage Area) was split into two sections and was surveyed over two nights per survey visit.
- 3.2.2 No GCN were found in any ponds, drains or ditches surveyed on-site during any of the survey visits approaches.
- 3.2.3 Both smooth newt *Lissotriton vulgaris* were recorded in Ponds P1, P2, P3, the ephemeral pool (P5) and in the interceptor ditch (D4) on the boundary of the operational Coal Storage Area with small newt eggs also found in all the waterbodies except Lamby's Lake (P3) and the ephemeral pool (P5). Very small numbers of smooth newts were found in the North Drain (D1) and no eggs were recorded

in this location. Individual palmate newt *Lissotriton helveticus* were caught in bottle traps in P1, P2 and D4 populations compared to peak counts of over 30 smooth newts in P1 and D4.

- 3.2.4 Individual smooth newts were found during torching surveys of the ephemeral pool (P5) in the Laydown Area, but no eggs were found in the sparse marginal vegetation growing in the shallow water.
- 3.2.5 Other amphibians confirmed to be breeding in the waterbodies within the site were common frog *Rana temporaria* and common toad *Bufo bufo*.
- 3.2.6 A summary of the survey findings is provided in Table 3.2, with the full survey results presented in Appendix A.

Table 3.2 Results summary and peak counts of GCN presence / absence survey.

Waterbody	GCN Peak Count			Smooth newt Peak Count		Palmate newt	Small newt eggs Present	Date of smooth newt peak count
	Traps	Torch	Eggs Present	Trap	Torch	Trap		
P1	0	0	No	35	6	1	Yes	30/04/19
P2	0	0	No	15	7	1	Yes	16/04/19
P3	0	0	No	15	9	0	No	17/04/19
P5	n/a	0	No	n/a	3	n/a	No	15/05/19
D1	0	0	No	2	0	0	No	17/04/19
D2	0	0	No	0	0	0	No	n/a
D3	0	0	No	0	0	0	No	n/a
D4 (W)	0	0	No	16	17	1	Yes	30/04/19
D4 (E)	0	0	No	31	7	0	Yes	15/05/19

4 CONCLUSION

- 4.1.1 The survey findings give high confidence in absence of GCN populations in the lake, ponds, drains and ditches within the power station site. Closest known GCN population lies over 1km to the south-east of the power station within the eastern part of the Newport Wetlands reserve.
- 4.1.2 Presence/absence of GCN in the off-site pond in sewage treatment works could not be assessed. There is potential for GCN to utilise terrestrial habitats within the site during active and hibernation periods.
- 4.1.3 The survey has confirmed the presence of breeding populations of three other amphibian species smooth newt, common frog *Rana temporaria* and common toad *Bufo bufo*. In addition, palmate newts were recorded in very small numbers and are also likely to be breeding within the site.
- 4.1.4 Smooth newts were recorded in all three ponds and in the interceptor ditch around the Coal Storage Area despite indications of reduced water quality. Two smooth newts were seen in the North Drain during one of the surveys in early spring, but this channel was completely dry by the end of May and is not considered to support a breeding population

5 REFERENCES

English Nature (2001). Great Crested Newt Mitigation Guidelines. Available from: <http://webarchive.nationalarchives.gov.uk/20140605121141/http://publications.naturalengland.org.uk/publication/810429?category=30014> (Accessed 01/05/2019).

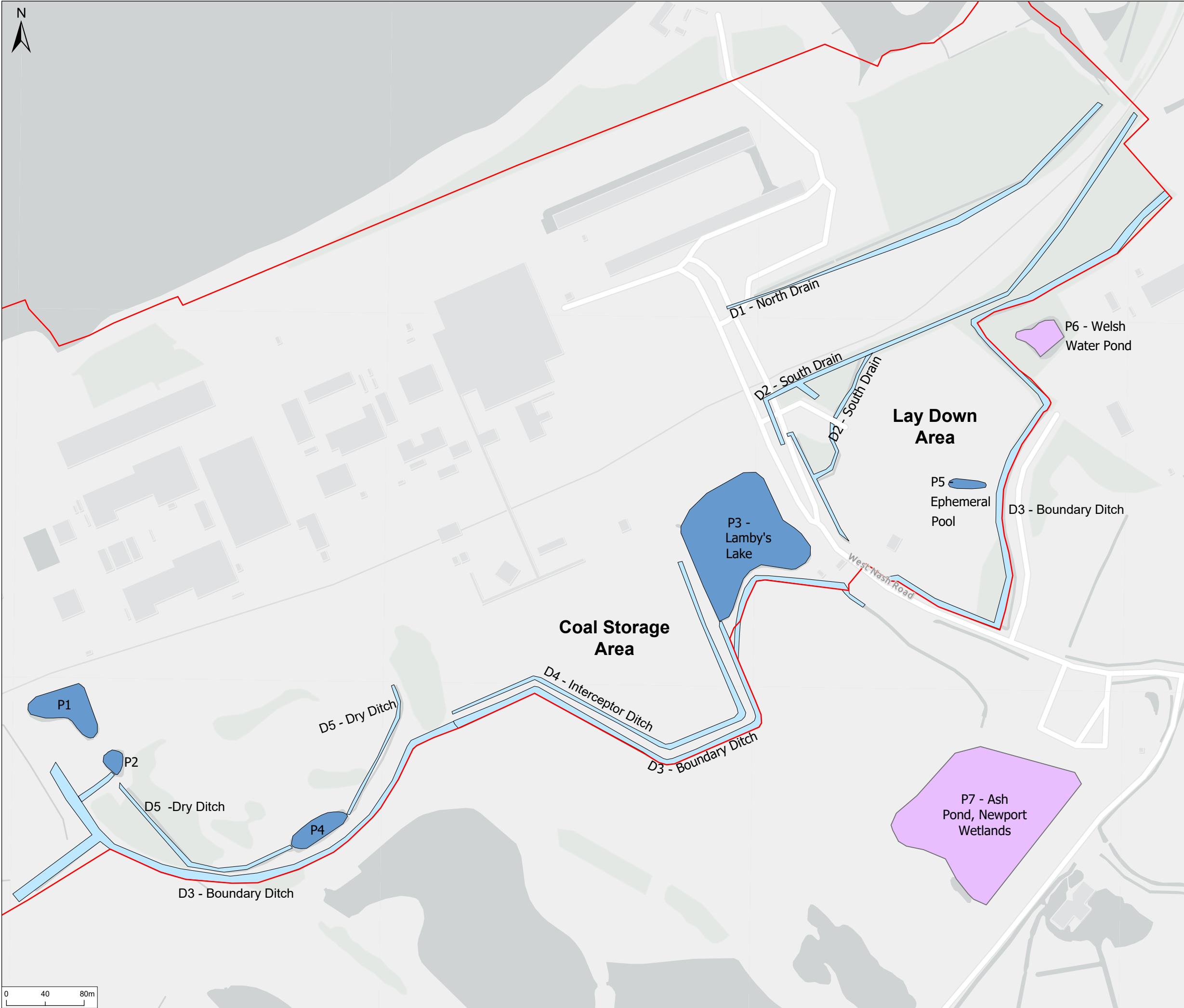
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MAGIC Interactive Map. Available from: <http://www.magic.gov.uk/home.htm>

FIGURES

- ECO00312-ECO-011 Waterbodies Location Plan

\\CARD-PH-02\\Env\\Planning\\Projects\\Current projects\\B ECO00312 Uskmouth power station EIA (Bristol)\\4. Data & Fieldwork\\GIS\\Ecology- Internal use\\Ecology- Internal use.aprx



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- Legend**
- Approximate Site Boundary
 - Ponds on-site
 - Drains/Ditches on-site
 - Ponds off site

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 Waterbodies Location Plan

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APPENDICES

- **Appendix A.** GCN Presence / Absence Survey Full Results

Appendix A

GCN Presence/ Absence Survey Full Results

Survey Information							Trapping Results			Torching Results				Small Newt Eggs (Y/N)	Comments
Date	survey no.	Waterbody	No. of traps	Trap margin %	Veg. cover *	water clarity *	Smooth newt	Palmate newt	small newt efts/ juvenile	smooth male	palmate male	small newt female	efts		
10/04/19	1	P1	30	40	2	1	2	0	0	1	0	0	0	N	clear water, good invert diversity. Trapping margin difficult due to vegetation growth/steep banks on one side
10/04/19	1	P2	15	60	3	2	2	0	0	3	0	11	0	N	1 dead frog
10/04/19	1	D3	5	5	4	2	0	0	0	0	0	0	0	N	Lots of small fish, suspected stickleback. Water thick with dead reeds/mixed vegetation. Difficult to trap. Banks very steep and completely inaccessible for majority of bank.
10/04/19	1	D4.1	35	70	0	4	2	0	0	3	0	11	0	N	
16/04/19	2	P1	30	40	2	1	11	0	0	1	1	10	0	N	
16/04/19	2	P2	23	70	3	1	15	0	0	7	1	5	0	N	
16/04/19	2	D3	4	5	4	1	0	0	0	0	0	0	0	N	
16/04/19	2	D4.1	40	70	1	4	16	1	0	5	2	15	0	N	1 CF, 1 CT in torching, 2CF in trapping
17/04/19	1	P3	59	75	1	4	15	0	0	9	0	4	0	N	
17/04/19	1	D1	20	10	3	2	2	0	0	0	0	0	0	N	CF tadpoles
17/04/19	1	D2	23	15	3	3	0	0	0	0	0	0	0	N	stickleback fish
17/04/19	1	D4.2	20	34 (ran out of time)	1	4	12	0	0	7	0	4	0	N	CF tadpoles
30/04/19	3	P1	30	40	2	3	35	1	0	3	0	5	0	N	CF tadpoles
30/04/19	3	P2	23	60	3	1	13	1	0	6	0	9	0	N	CF tadpoles
30/04/19	3	D3	0	0	4	1	//	//	//	//	//	//	//	//	Bank edge to steep to reach water for traps

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30/04/19	3	D4.1	60	80	1	1	14	0	0	17	0	10	0	N	3 small newts, too fast to ID, 3 common frogs
01/05/19	2	P3	70	95	1	3	4	0	0	4	0	2	0	N	1 new too quick to ID
01/05/19	2	D1	18	10	3	3	2	0	0	0	0	0	0	N	CT tadpoles
01/05/19	2	D2	23	15	3	3	0	0	0	0	0	0	0	N	fish
01/05/19	2	D4.2	40	70	2	3	30	0	0	6	0	4	0	N	2 CF, CF tadpoles
01/05/19	1	P5	NA	NA	3	3	//	//	//	2	0	1	0	N	
09/05/19	3	P3	28	20	1	3	2	0	0	2	0	2	0	N	cadis fly larvae and damsel fly larvae Due to high winds during trap set up, the risk of floating traps capsizing, and cane traps being blown over (due to unstable stone substrate) was too high. Traps were only put out on one side of the pond where wind disturbance was less. present. Waterfowl = Canada goose, swan, tufted duck, mallard duck
09/05/19	3	D1	18	10	3	4	0	0	0	0	0	0	0	N	
09/05/19	3	D2	23	15	3	4	0	0	0	0	0	0	0	N	
09/05/19	3	D4.2	40	70	2	3	7	0	0	6	0	9	0	Y	cadis fly larvae and damsel fly larvae present
09/05/19	2	P5	NA	NA	3	1	//	//	//	1	0	0	0	N	
14/05/19	4	P1	40	40	2	3	31	0	0	1	0	12	0	N	
14/05/19	4	P2	23	70	3	1	12	0	0	1	0	5	0	Y	
14/05/19	4	D4.1	60	70	2	2	8	0	0	9	0	17	0	N	CF x 5
15/05/19	4	P3	70	95	1	3	0	0	0	1	0	6	0	N	eels present, adult grass snake seen on bank edge.
15/05/19	4	D1	18	10	4	3	//	//	//	0	0	0	0	N	Too shallow to put traps due to drop in water levels. No longer trapped
15/05/19	4	D2	23	15	1	2	0	0	0	0	0	0	0	N	
15/05/19	4	D4.2	40	70	3	3	31	0	0	3	0	7	0	Y	CT, CF, bank vole
15/05/19	3	P5	NA	NA	3	3	//	//	//	3	0	0	0	N	
30/05/19	5	P1	40	40	2	4	9	0	4 efts, 2 juv.	6	0	11	1	Y	CF, CT. Large amount of small common frogs during torching (500-700)
30/05/19	5	P2	23	70	3	1	4	0	2	4	0	4	1	Y	CT, CF
30/05/19	5	D4.1	14	70	2	4	0	0	1	0	0	0	2 juv	N	CF. Less traps due to receding water level
31/05/19	5	P3	70	95	1	3	2	0	0	0	0	2	0	N	

GCN REPORT

31/05/19	5	D1	//	//	//	//	//	//	//	//	//	//	//	//	//	Water level too low to trap/torch
31/05/19	5	D2	23	15	1	3	0	0	0	0	0	0	0	0	N	
31/05/19	5	D4.2	40	70	3	3	8	0	2	2	0	2	1 juv	Y		
31/05/19	4	P5	NA	NA	3	3	//	//	//	0	0	0	0	N		
05/06/19	6	P1	40	40	2	4	10	0	0	4	0	3	0	N		
05/06/19	6	P2	23	70	4	1	1	0	0	0	0	0	1	Y		
05/06/19	6	D4.1	4	70	2	3	0	0	0	5	0	0	0	N		Less traps due to receding water level
06/06/19	6	P3	68	95	1	3	1	0	0	0	0	0	0	N		
06/06/19	6	D1	//	//	//	//	//	//	//	//	//	//	//	//		Water level too low to trap/torch
06/06/19	6	D2	//	//	//	//	//	//	//	//	//	//	//	//		Water level too low to trap/torch
06/06/19	6	D4.2	30	70	3	2	4	0	2	0	0	2	0	Y		Less traps due to receding water level
06/06/19	5	P5	//	//	//	//	//	//	//	//	//	//	//	//		Water level too low to trap/torch

*Survey codes for Table 3 for rainfall, water clarity, "veg" vegetation cover and wind disturbance are as follows:

Vegetation Cover

- 0 no vegetation obscuring survey
- 5 vegetation completely obscuring survey

Water Clarity Score

- 0 Totally clear
- 1 very slightly turbid, bottom still visible
- 2 Slight turbid, bottom visible but not clear
- 3 Turbid, bottom visible on shallows
- 4 Turbid, bottom not visible, some visibility in very shallow water
- 5 Completely turbid, no visibility

Rainfall

- 0 none
- 1 yesterday light/moderate/heavy (L/M/H)
- 2 immediately prior (L/M/H)
- 3 during survey (L/M/H)

Wind Disturbance

- N None
- L Light - Slight breeze not affecting water surface
- M Moderate - Moderate breeze, water surface slightly disturbed
- H High - High disturbance, water surface very disturbed