

WATER VOLE AND OTTER SURVEY REPORT – USKMOUTH POWER STATION

On behalf of SIMEC Atlantis Energy



ECO00312 Uskmouth Power
Station
Water Vole Report
A
4th January 2020

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
A	Issue to client	Tim Oliver	Tim Oliver	Tim Oliver	04/01/2020

Approval for issue

Tim Oliver

1 January 2020

© Copyright RPS Group Plc. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS'), no other party may use, make use of, or rely on the contents of this report. The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made. RPS has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy. No part of this report may be copied or reproduced, by any means, without the prior written consent of RPS.

Prepared by:

RPS

Tim Oliver
Associate Director

2 Callaghan Square
Cardiff
CF10 5AZ

T 02920 668 662
E laura.white@rpsgroup.com

Prepared for:

SIMEC Atlantis Energy

Cara Donovan
Environment and Consents Manager

4th floor, Edinburgh Quay 2,
139 Fountainbridge,
Edinburgh,
EH3 9QG

T 07469 854 528
E cara.donovan@simecatlantis.com

Contents

1	INTRODUCTION	1
1.2	Local Status.....	1
	Water Vole.....	1
	Otter	1
1.3	Legislation	1
	Water Vole.....	1
	Otters.....	2
2	SURVEY AREA	3
2.1	Water Vole.....	3
2.2	Otter	3
3	METHODS	4
3.1	Water Vole.....	4
3.2	Otter	4
3.3	Survey Constraints	5
	Drains and Ditches	5
4	RESULTS	7
4.1	Water Vole.....	7
	North Drain	7
	South Drain	7
	Boundary Ditch.....	8
	Lamby's Lake	9
	Ponds 1 and 2	9
4.2	Otter	9
	Habitat Suitability	9
	Field Signs.....	10
5	CONCLUSION	11
5.1	Water Vole.....	11
5.2	Otter	11
6	REFERENCES	12

Figures

Drawing Number ECO00312-ECO-007 - Water Vole and Otter Survey Plan

Drawing Number ECO00312-ECO-008 - Water Vole Survey Inset Plan

1 INTRODUCTION

- 1.1.1 RPS were commissioned by SIMEC Energy Atlantic Ltd to under presence/absence surveys for water vole and otter at Uskmouth Power Station located near Nash, Newport, South Wales, centred on the Ordnance grid reference SN141 072.
- 1.1.2 The power station adjoins the River Usk estuary to the north and west with a tidal creek (Julian's Gout Pill) on the north-eastern boundary of the power station landholding.
- 1.1.3 The River Usk, including the estuary and tidal creek east of the site is designated a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC). The River Usk flows into the Severn Estuary, immediately to the west of the power station. The Severn estuary is designated as a SSSI, Special Protection Area (SPA) and Ramsar site.
- 1.1.4 Beyond the northern boundary reed and saltmarsh vegetation are present in the intertidal areas of River Usk. A narrow margin of scrub / woodland adjoins the north-eastern boundary of the power station site between the operational site, and intertidal habitat/sailing club.
- 1.1.5 To the south, the power station site adjoins the Newport Wetlands SSSI and National Nature reserve (NNR). A deep ditch, bounded on both sides by dense continuous scrub, forms the boundary with both the SSSI and the adjacent sewage treatment works. Extensive scrub and grassland are located on the boundary of the SSSI adjoining the power station.

1.2 Local Status

Water Vole

- 1.2.1 Water voles known to be present in the local area with 14 records from the last 10 years. The site contains drains, ditches and waterbodies and surveys were conducted in suitable habitat to assess presence/absence of water vole populations.

Otter

- 1.2.2 The record centre hold 26 records of otter *Lutra lutra* from within 2km of the power station from the last 10 years. There is a known otter population associated with the lower reaches of the River Usk and the adjoining areas of the Gwent Levels.
- 1.2.3 The otter is an Annex II species and a qualifying feature and a primary reason for the selection of the River Usk SAC along with several migratory fish species. It is known to use the lower reaches of the River Usk and the adjoining parts of the Severn estuary and site personnel have reported anecdotal sightings of otter on the western boundary of the power station and from a small man-made tank in a location surrounded by built development between the gas fired power station and national grid site.

1.3 Legislation

Water Vole

- 1.3.1 Water voles, and their breeding/sheltering places, are protected under the Wildlife and Countryside Act 1981 (as amended). Water voles are protected against intentional killing, capture or injury; intentional or reckless destruction of a shelter/structure that a water vole is occupying and intentional or reckless disturbance, obstruction, damage or destruction to their burrows or places of shelter. A place of shelter for water voles includes their burrow system/network and nests within or nearby burrows, usually within dense vegetation.

Otters

1.3.2 The otter is fully protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. The Regulations prohibit:

- Intentionally, recklessly or deliberately kill, injure or take a Dormouse;
- The deliberate disturbance of this species in such a way as to be significantly likely to affect:
- Their ability of to survive, hibernate, migrate, breed, or rear or nurture their young; or;
- The local distribution or abundance of Dormice.
- Damage or destruction of a breeding site or resting place (nest);

1.3.3 Otters are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:

- Intentional or reckless disturbance (at any level);
- Obstruction of access to any place of shelter, breeding or rest;

2 SURVEY AREA

2.1 Water Vole

2.1.1 The water vole survey covered four drains/ditches within the site shown on the Water Vole & Otter Survey Plan (Drawing Number ECO00312-ECO-007), comprising:

- North Drain (D1) – located in dense scrub to the north of the disused railway line
- South Drain (D2) - located in dense scrub to the south of the disused railway line
- South Boundary Ditch (D3) - located in dense scrub along the boundary with the Sewage Treatment Works and the Newport Wetlands Reserve
- Interceptor Ditch on the perimeter of the sparsely vegetated Coal Storage Area (D4)

2.1.2 A man-made waterbody, known as Lamby's Lake, located between the Coal Storage Area and the Laydown Area was also assessed for its potential to support water voles.

2.2 Otter

2.2.1 The searches for evidence of otter activity covered suitable accessible habitat throughout the power station site. All the drains, ditches and the margins of the lake and ponds were also surveyed for otter activity.

2.2.2 Other features specifically surveyed for field signs of otter were the two ponds and a separate area of reedbed in the western section of the power station site and Julian's Pill, a tidal channel of the River Usk, on the north-western boundary of the power station landholding located within the River Usk SSSI/SAC. The two ponds (P1 and P2) are located between two raised landforms which support a mosaic of rank grassland, scrub, bramble and maturing woodland. The linear reedbed is located on the southern boundary of the eastern landform.

2.2.3 All the habitats areas are located on Water Vole & Otter Survey Plan (Drawing Number ECO00312-ECO-007).

3 METHODS

3.1 Water Vole

- 3.1.1 In March 2019 the localised cutting back of bramble, tall herb and scrub was undertaken along the North Drain and South Drain as well as at P1 and P2 to enable access to the margins of waterbodies for the great crested newt survey. Gaps were created in scrub, bramble, tall herb vegetation to provide access to the banks for the surveyors.
- 3.1.2 In April and May surveyors undertook searches for signs of water vole at selected accessible locations along the drainage channels. The survey visits were conducted during mild weather conditions, moderate wind (<5mph) and no heavy rain.
- 3.1.3 Further localised cutting back of vegetation alongside the North Drain and South Drain was carried out in July 2019 under an ecological watching brief to enable access on foot for the topographical surveyors to record levels. Any signs of otter and water vole activity including mammal holes were noted by the Ecological Clerk of Works in advance of cutting and following the cutting back of vegetation. Notes were made on the vegetation, bank substrate and profile of the channel to inform suitability for water vole and otter.
- 3.1.4 In August 2019, the South Drain was subject to detailed surveys for signs of activity. The South Drain was surveyed from within the channel enabling fingertip searches for latrines, burrows, runs, feeding piles and prints within the vegetation. A follow up targeted survey of the central section of the South Drain was undertaken in late September.
- 3.1.5 Two accessible sections of the boundary ditch (Points B and C) were surveyed from the bank and from an inflatable kayak where deeper water and the banks too steep and/or densely vegetated to allow access on foot. Minimal vegetation cutting was undertaken at the boundary ditch to protect the scrub habitat on the banks and faunal species associated with them.
- 3.1.6 The survey visits as a whole were undertaken by Mike Shewring (MCIEEM), Kate Davies (ACIEEM), Georgia Kelly (ACIEEM), Laura White (GradCIEEM) and Stephen Devereaux (GradCIEEM).
- 3.1.7 During all the survey visits, field signs of water voles, including latrines, feeding signs and burrows, were noted and mapped where it could be determined that these were definitively those of water voles. In some cases, it can be difficult to distinguish these field signs from those of field voles *Microtus agrestis* or brown rats *Rattus norvegicus*. The suitability of the habitat for water voles was assessed. The level of bankside and in-channel vegetation was noted, along with the level of shading, and steepness and substrate of the banks.

3.2 Otter

- 3.2.1 In April and May surveyors undertook searches for signs of otter activity at selected accessible locations along the drainage channels. The survey specifically covered the margins of Julian's Pill, accessible parts of the channels of the North Drain and South Drain – created for the GCN surveys, the margin of Lamby's Lake and Ponds 1 and 2. Survey also assessed accessible woodland, scrub and reedbed habitat and covered the margins of dense scrub habitat that could not be accessed. to look for evidence of paths. The site visits were conducted during mild weather conditions, with a light to moderate wind (<5mph) and avoided periods of heavy rain.
- 3.2.2 During the survey visits, all areas of potentially suitable otter habitat were inspected for field signs that would indicate the presence of otter, as well as features which may be used as holts and couches). Otter field signs including spraints, prints in soft ground, and the remain of prey items such as fish, crabs or skinned amphibians. Clear wider mammal paths associated with ditch crossings or entering dense scrub were noted and mapped.

- 3.2.3 Searches were made in woodland and accessible scrub for features with the potential to be used as a holt including any large holes (or tunnels) in the banks of drains, cavities beneath the root-plates of large trees, cavities in boulders, and man-made structures such as disused drainage pipes. The survey also looked for potential above-ground resting sites (couches) which can sometimes consist of no more than an area of flattened grass or earth.
- 3.2.4 In addition, a camera trap was set on the southern side of Julian's Pill for 11 days between the 4th and 15th May in a location of a mammal path and slide into the tidal creek.

3.3 Survey Constraints

Drains and Ditches

North Drain D1

- 3.3.1 Due to the extremely dense nature of the scrub covering the majority of the North Drain only narrow sections within the isolated observation points could be seen and assessed in spring 2019 with extensive impenetrable scrub and bramble thicket and woody vegetation and a steep bank gradient and low water levels. From vantage points 40% of the length of the drainage channel could be viewed from the gaps created. The 95% of drain had dried out by mid-summer with shallow open water only present at the eastern end. Localised cutting back of bramble and tall herb vegetation on the steep banks in July enabled greater access to the drain channel in late summer.

South Drain D2

- 3.3.2 The banks of the South Drain were heavily vegetated along its length and in order to gain access 14 cut throughs were made from the road to the water edge on the northern bank. The majority of the bankside vegetation consisted of butterfly bush and bramble scrub which prevented the surveyor from walking the bank and so where possible the surveyor, wearing appropriate PPE, entered the channel and assessed the banks for signs of water vole from here.
- 3.3.3 Selective cutting back of bramble and tall herb vegetation on the steep banks of the drain in July assisted with safe access to the channel of the drain in late summer and autumn.
- 3.3.4 At the westernmost end of the South Drain the channel became too deep (>1m) to safely survey from within the channel and the trees and shrubs on the bank meant that this section could not be safely assessed. At the easternmost end of the South Drain the bank was too steep to safely access the water.

Boundary Ditch D3

- 3.3.5 A ditch runs along the southern boundary of the site; an eastern section running from the gatehouse to the boundary with Liberty Steel on the eastern site boundary and a western section running south of Lamby's Lake and the Coal Storage Area on the boundary with the Newport Wetlands.
- 3.3.6 In both sections, the channel had steep banks and very dense impenetrable vegetation (scrub, and bramble) with minimal visibility of the channel and its margins. Access was created to selected short sections of the channel to enable comprehensive searches for field signs in these locations.
- 3.3.7 The majority of the boundary ditch lies beneath dense impenetrable scrub and could not be surveyed. The edge of the scrub habitat was walked to look for strong mammal paths that could be frequently used by otter.

Western Section

- 3.3.8 The western section of the boundary ditch, to the south of Lamby’s Lake and the Coal Storage Area, could be reviewed in localised positions on the northern bank but the southern bank (outside the power station landholding) was very heavily vegetated with bramble scrub and tall herbs overhanging the channel and completely obscured views of the far bank.
- 3.3.9 The more open areas had a dense cover of tall herb on steep sloping banks and deep open water in the channel. All accessible sections (approximately 60% of the length of the north bank) were surveyed from the base of the bank in late September channel on the northern side and as such could not be accessed or viewed from the north bank.

Eastern Section

- 3.3.10 Access was attempted in four locations; Points A – D as illustrated on the Water Vole Survey Plan but detailed survey was not possible in two of the four locations. Foot access to the channel was created through scrub at Point A. The 2m wide channel was too deep to enter on foot and the dense hawthorn prevented the surveyors from safely entering the drain using a kayak or surveying from the banks. Therefore, at Point A only a short section of the banks could be viewed with no visibility of the banks in adjacent sections.
- 3.3.11 Point D was heavily vegetated on both banks with fences also running along each bank preventing the survey from being carried out from the bank. The channel was also deep (>1.5m) and wide (>2m) at this point and this combined with the inability to provide bankside support meant that it was deemed unsafe for the surveyor to enter the channel here and as such this section could not be surveyed.

Ponds

Waterbody	Description of Survey Access
P1	Access in spring and summer was limited to 50% of the bank due to steep edges and thick woody vegetative growth.
P2	Access in spring and summer was limited to 75% of the bank due to thick woody vegetative growth.
P3	Large man-made waterbody with 100% of the margin accessible.
P4	Localised area of reedbed with small area of shallow open water with no safe access only to the margin.

4 RESULTS

4.1 Water Vole

North Drain

Habitats

- 4.1.1 The North Drain channel is up to 2m wide has a fluctuating water level, holding water in winter but drying out each year. By early summer most of the channel only had very shallow open water (<10cm) with localised area of exposed mud with no standing water. By late summer 90% of the channel was completely dry with open water limited to the eastern end where it connects with Julian's Reen via a culvert.
- 4.1.2 The North Drain lies on the scrubby southern boundary of Julian's Gout Land SINC and the channel is heavily shaded by bramble, woody scrub and trees. Dense bramble is the dominant cover along both banks for the majority of its length with scattered butterfly bush, hawthorn, blackthorn, willow and birch. Due to the dense over-shading scrub there is very little low-lying vegetation on the banks or in the drain.
- 4.1.3 The habitat conditions of the North Drain have very limited value to water vole lacking ground cover, plants on which to feed and drying out each year. In addition, the bank substrate is very stony with the ground conditions indicating modification by past industrial activities.

Field Signs

- 4.1.4 No field signs of water vole were recorded. There were no prints in the exposed mud or piles of droppings which would have been visible on the surface.

South Drain

Habitats

- 4.1.5 The South Drain is partly heavily shaded by bramble with scattered, trees and scrub with more open sections with established vegetation in the channel and on the banks.
- 4.1.6 The western and eastern ends of the South Drain are shaded sections, with the bankside vegetation consisting of scrub, with bramble thicket. Light penetration is poor and the ground beneath the scrub was unvegetated; restricting food availability and providing very limited cover at ground level. These sections had very low potential value for water vole.
- 4.1.7 In the central section of the South Drain, the channel is more open in some parts of the central section with only scattered tree cover on the banks.
- 4.1.8 Marginal vegetation in this section includes a 40m stretch of established stand of common reed *Phragmites australis* with a maximum water depth in the centre is 1m but there is a dense mat of root with a depth of less than 30cm on the sides of the channel. At this location the northern bank is 3-4m high with reed growing at the base and bramble and scrub at the top. In comparison, the southern bank has a very low profile and grades into low-lying woodland.
- 4.1.9 Localised areas of more diverse marginal vegetation include great willowherb *Epilobium hirsutum* and bulrush *Typha latifolia*, with soft rush *Juncus effusus*, common nettle *Urtica dioica* and hemp agrimony *Eupatorium cannabinum* on the bank. The substrate in these areas is stony and the open water was 20-30cm deep.
- 4.1.10 The western end of the drain is adjoined by dense scrub which partially shade this section of the drain which has banks that are largely bare ground and a water depth of over 1m.

- 4.1.11 The South Drain the bank substrate consisted of made ground constructed of crushed stone and loose sand over which a thin layer of organic soil has developed. This substrate is likely to significantly limit burrowing opportunities in the areas of highest suitability with established marginal vegetation although the would provide many suitable burrowing sites

Field Signs

- 4.1.12 During the July walkover survey at total of three latrines were found, all within the stand of common reed in the central section of the drain, two on the southern bank and one on the northern bank. A short 10cm deep dead-ended burrow entrance in the stony bank where a burrow had been abandoned. Multiple mammal runs were present on the bankside in this location.
- 4.1.13 The survey in late September recorded six water vole burrow entrances in the base of bank in the section of common reed. There were clear slides into the water from two of the burrow entrances and a feeding station on the bank at the eastern end of the colony. Dense herbaceous vegetation which had been significantly obscuring views of the bank during the previous survey was selectively cut back during the survey to create visibility. Signs of feeding (sections of new shoots of common reed) were scattered along the runs. All the burrows found in the base of the steeper northern bank. No latrines were found during the late September survey, but it was undertaken after an extended period of heavy rainfall. No signs of water vole were recorded in the other localised areas of marginal vegetation. The findings are mapped on the Water Vole Survey Results Plan (Drawing Number ECO00312-ECO-008).

Boundary Ditch

Habitat

Eastern Section

- 4.1.14 The eastern section of the boundary ditch varied in structure in the few accessible locations with wide channels with deep open water c1.5m (Points A and C) and a 150m section (Point B) that was dry during the August and September surveys.
- 4.1.15 No signs of water vole were recorded in the accessible sections. The ditch on the eastern side of the laydown area was dry in August and lacked herbaceous vegetation and has been classified as unsuitable for water vole.
- 4.1.16 A more open area of scrub cover over the ditch on the boundary of the Laydown Area enabled a short section of the channel to be surveyed by kayak. The bankside vegetation consisted of scrub dominated by bramble and hawthorn, with little herbaceous bankside vegetation limiting the foraging opportunities and is sub-optimal habitat for water vole.

Western Section

- 4.1.17 The banks of the western section of channel support dense tall herb vegetation with bramble and scattered woody scrub. The vegetation partially overhangs the open water channel which was c2m wide with dense scrub and bramble on the southern bank.
- 4.1.18 The on-site bank of the western section of the boundary ditch was accessed in late September when the tall herb vegetation had begun to dieback increasing the visibility of the bank and aiding safe access to its base of the bank in a few locations.
- 4.1.19 Many short blind ended burrow entrances were noted in the base of the northern bank and are likely to poor nature of the bank substrate for burrowing. Based on the field signs it is used that there will be burrows in the southern bank which were not visible because of the overhanging herbaceous vegetation and bramble.

Field Signs

- 4.1.20 Water vole presence was confirmed on the south-eastern boundary of the Coal Storage Area as mapped on the Water Vole Survey Results Plan (Drawing Number ECO00312-ECO-008).
- 4.1.21 A single small latrine (8 fresh droppings) was recorded along with two feeding piles (piles of cut vegetation) and several runs at the base of the bank into the water. No burrows were found in the bank, but the far bank was obscured by overhanging vegetation and could not be accessed due to the continuous belt of impenetrable scrub.

Lamby's Lake

- 4.1.22 The man-made reservoir is an engineered water body with stone revetment margins and only a narrow fringe tall herb/emergent with limited cover growing on shallow soil that has accumulated over time at the water edge. No field signs of water vole were recorded, and the waterbody is considered to have very low – negligible potential value for water vole based on its construction.

Ponds 1 and 2

- 4.1.23 Ponds 1 and 2 located in the western part of the power station landholding are fringed by stands of emergent vegetation (bulrush) but both ponds had a stony substrate and banks indicating that they would be unsuitable for burrowing. No field signs were observed, and the ponds are considered to have very low – negligible potential value for water vole.

4.2 Otter

Habitat Suitability

- 4.2.1 The site supports a number of habitats of potential value for otter, primarily associated the southern boundary and Julian's Pill on the northern boundary.
- 4.2.2 The tidal and intertidal habitats associated with Julian's Pill and the River Usk on the northern boundary of the power station have high value for otter with a known population being a qualifying feature of the River Usk Special Area of Conservation. Otters regularly wash in freshwater the flow from Julian's Reen into the pill further increases the value of habitats for otter on the boundary of the site.
- 4.2.3 A high retaining wall along the north-western boundary of the site creates separation between the extensive saltmarsh habitats and the main power station infrastructure.
- 4.2.4 The three ponds with open water had the potential to be used for hunting with the presence of eels and fish in Lamby's Lake and the potential presence of fish populations in the two smaller ponds (P1 and P2) in the western part of the power station.
- 4.2.5 The shallower depth of open water in the drains will significantly limit their value as foraging habitat but the dense inaccessible scrub along part of the southern boundary and offsite to the south provide dense cover in which otters could have holts or lay up during the day.
- 4.2.6 The woodland block (Julian's Gout Land SINC) had a relatively open structure and lacked extensive dense cover in which otters could lay up undisturbed. The dense bramble thicket on the northern side of the woodland adjoins saltmarsh and reedbed. The habitat could not be accessed by surveyors would provide cover in which otters could rest.
- 4.2.7 Woody scrub along on the North Drain and South Drain were surveyed during localised cutting back of branches and bramble to create access tracks for the topographic surveyors. The growth habitat of butterfly bush creates very little ground cover limiting the value of the habitat for otter.

Field Signs

- 4.2.8 No paths or signs of otter were present along the North Drain or South Drain. There were no field signs on the margins of the ponds P1, P2 or Lamby's Lake but these would not necessarily be left by hunting animals. Based on the known fish populations, it is very likely that otters feed in Lamby's Lake which adjoins the boundary ditch and dense scrub in the Newport Wetlands reserve.
- 4.2.9 A frequently used otter path was recorded on the side of Julian's Pill. Frequent use of the path was confirmed on camera traps and from associated field signs with otter prints were visible in the soft mud. with a clear path from reedbed on the edge of the channel up a grass bank and up to the internal track and railway line.
- 4.2.10 The start of an otter path was visible on the opposite side of the track/railway, leading down an extremely steep bank and beneath the bramble thicket and woody scrub. Using a torch, it was confirmed that path went directly down into the channel where the power station boundary ditch joins Julian's Reen on the boundary with Liberty Steel and the sewage treatment works.
- 4.2.11 Terrestrial habitats with good cover for otters lies to the north, south and east of this location with dense scrub and waterbodies on the eastern side of the Liberty Steel site, dense scrub woodland on the boundary of the sewage treatment works and dense scrub in the power station between the South Drain and the boundary ditch. Due to vegetation cover on both sides of the bank, we could not clearly see if there was a path up the bank on the other side of the drain or if otters move along Julian's Reen, offsite to the north-east. No signs of otter activity were recorded along the South Drain channel and no defined paths were seen during the selective cutting back along the South Drain for the topographical survey.
- 4.2.12 In the western section of the boundary ditch, south of Coal Storage Area, a mammal slide was noted through tall herb vegetation down the northern bank of the boundary ditch. It is possible that this feature could be used by otters.

5 CONCLUSION

5.1 Water Vole

- 5.1.1 The survey has confirmed the presence of water vole colonies in two locations within the eastern half of the power station site. Access to the channels to survey for water vole was hindered by bramble thicket, woody scrub and tall herb vegetation growing on steep banks. Over several survey visits aided by the selective cutting back of vegetation, the survey confirmed the likely absence from the North Drain and the presence of a single small colony in the less shaded central section with established stands of emergent vegetation (reed).
- 5.1.2 Although the topography at the drain with deep open water and steep bank should allow to excavation of burrows at varying heights above the water levels, the bank substrate on the steeper northern side of the channel is almost entirely made ground with a high content of stone/hardcore which will significantly limit opportunities for burrowing.
- 5.1.3 Evidence of activity only recorded in the section of highest potential value. Due to the limitations of survey access, the absence of water voles from the other more shaded sections could not be confirmed with high confidence but is likely due to the sub-optimal nature of the habitat.
- 5.1.4 The low levels of field signs (<5 latrines per 100m) indicates a low population (Water vole mitigation handbook, 2016).
- 5.1.5 The low levels of water vole activity recorded in a relatively short section in the western section of the boundary ditch. The limitations of access to the bank and channel will have meant that many field signs, including burrows, were undetected but with only single observed latrine the results indicate the presence of a second small colony.
- 5.1.6 No signs were found in the localised sections of the eastern boundary ditch that were accessed. The density of the scrub along this section of channel (partially assessed from aerial photographs) means that the habitat is classified as sub-optimal for water vole, but there is close connectivity between the South Drain and boundary ditch and it would be a habitat corridor.

5.2 Otter

- 5.2.1 The local otter population is a qualifying feature of the River Usk SAC with all suitable habitat within local area (inside and outside the power station site) falling within the presumed territories of individual otters, which will be far ranging.
- 5.2.2 The survey has confirmed the value of Julian's Pill as a regularly used route. The still photos of up to four otters on the remote camera moving up the bank past the gilled section of Julian's Reen in the period leading up to dawn indicates the presence of a holt (potentially a breeding holt) in relatively close proximity to this location which adjoins the boundaries of the Liberty Steel site, the sewage treatment works and the power station.
- 5.2.3 No holts or laying up places were recorded during the survey visits, but areas of dense scrub associated with the eastern section of the boundary ditch were not accessible.
- 5.2.4 Otters are often far ranging and all suitable habitats within the power station could be used by individuals hunting for food or resting with substantial areas of dense scrub and herbaceous cover, especially in the south-western section of the power station site and in the adjoining Newport Wetlands to the south.

6 REFERENCES

Bang, P and Dahlstrøm, P. (2001) *Animal Tracks and Signs*. Oxford University Press, Oxford.

Chanin, P. (2003) *Ecology of the European Otter*. Conserving Natura 2000 Rivers, Ecology Series No. 10. English Nature, Peterborough.

Chanin, P. (2003). *Monitoring The Otter *Lutra lutra** Conserving Natura 2000 Rivers, Monitoring Series No. 10. English Nature, Peterborough.

Coxon K, Chanin, P., Dalla J. F., and Sykes, T. (1999). The use of DNA fingerprinting to study the population dynamics of otters (*Lutra lutra*) in southern Britain: a feasibility study. R&D Technical Report W202, Environment Agency, Swindon, 123pp.

Kruuk, H., Carss, D. D., Conroy, J. W. H., and Durbin, L. (1993). Otter (*Lutra lutra*) numbers and fish productivity in rivers in north-east Scotland.

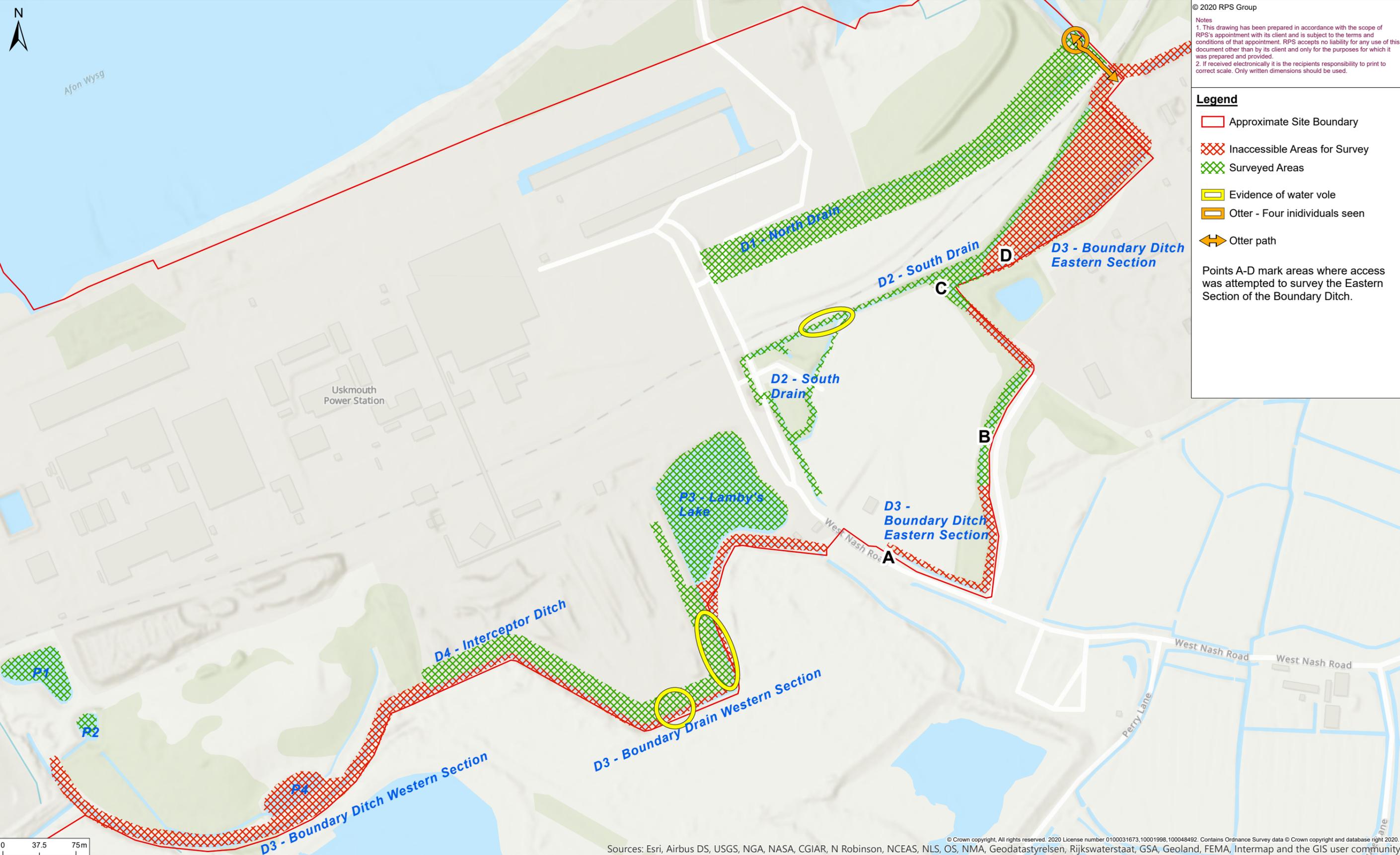
Liles, G. (2003) *Otter Breeding Sites*. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.

Natural England and the Countryside Council for Wales (2007) *Disturbance and protected species: understanding and applying the law in England and Wales*. A view from Natural England and the Countryside Council for Wales.

FIGURES

- Drawing Number ECO00312-ECO-007 - Water Vole and Otter Survey Plan
- Drawing Number ECO00312-ECO-008 - Water Vole Survey Inset Plan

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



© 2020 RPS Group
 Notes
 1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
 2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used.

Legend

- Approximate Site Boundary
- Inaccessible Areas for Survey
- Surveyed Areas
- Evidence of water vole
- Otter - Four individuals seen
- Otter path

Points A-D mark areas where access was attempted to survey the Eastern Section of the Boundary Ditch.

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
 © Crown copyright. All rights reserved. 2020 License number 0100031673,10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2020.

Rev	Description	By	CB	Date
Drawing Number				Rev
ECO00312-ECO-007				-

Client	SIMEC Atlantis Energy Ltd.
Project	Uskmouth Power Station
Title	Water Vole & Otter Survey Plan

Status	Drawn By	PM/Checked By
DRAFT	LW	TO
Project Number	Scale @ A3	Date Created
ECO 00312	1:3,600	FEB 2020

260 Park Avenue, Aztec West,
 Almondsbury, Bristol, BS32 4SY
 T: +44(0)1454 853 000
 E: rpssw@rpsgroup.com
rpsgroup.com

MAKING
COMPLEX
EASY

I:\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



© 2020 RPS Group
 Notes
 1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
 2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used.

- Legend**
- Approximate Site Boundary
 - Waterbodies on site
 - ◆ Bolt with run leading to water
 - ★ Burrow entrance
 - ✖ Feeding station
 - Latrine

Rev	Description	By	CB	Date
Drawing Number				Rev
ECO00312-ECO-008				-

Client **SIMEC Atlantis Energy Ltd.**

Project **Uskmouth Power Station**

Title **Water Vole Survey Results Plan**

Status **DRAFT**

Project Number **ECO 00312**

Scale @ A3 **1:**

Drawn By **LW**

Scale @ A3 **1:**

PM/Checked By **TO**

Date Created **FEB 2020**

260 Park Avenue, Aztec West,
 Almondsbury, Bristol, BS32 4SY
 T: +44(0)1454 853 000
 E: rps@rpsgroup.com
rpsgroup.com

**MAKING
 COMPLEX
 EASY**

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community