

# Outline Water Vole Conservation Strategy

## Uskmouth Power Station

ECO01486 Uskmouth  
Outline Water Vole Strategy  
1

27 October 2020

## Quality Management

Version	Revision	Authored by	Reviewed by	Approved by	Date
0		Tim Oliver	Dan Smyth	Tim Oliver	23 October 2020
1	1	Tim Oliver		Tim Oliver	27/10/20

## Approval for issue

Tim Oliver

MCIEEM

27 October 2020

## File Name

OXF11701 Uskmouth Outline WVS 201026\_v1

The report has been prepared for the exclusive use and benefit of our client and solely for the purpose for which it is provided. Unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS') no part of this report should be reproduced, distributed or communicated to any third party. RPS does not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report. 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.

The report has been prepared using the information provided to RPS by its client, or others on behalf of its client. To the fullest extent permitted by law, RPS shall not be liable for any loss or damage suffered by the client arising from fraud, misrepresentation, withholding of information material relevant to the report or required by RPS, or other default relating to such information, whether on the client's part or that of the other information sources, unless such fraud, misrepresentation, withholding or such other default is evident to RPS without further enquiry. It is expressly stated that no independent verification of any documents or information supplied by the client or others on behalf of the client has been made. The report shall be used for general information only.

### Prepared by:

**RPS**

**Tim Oliver**

**Associate Director**

260 Park Avenue  
Almondsbury  
Bristol  
BS32 4SY

T +44 1454 853 000

E [tim.oliver@rpsgroup.com](mailto:tim.oliver@rpsgroup.com)

### Prepared for:

**SIMEC Atlantis Energy Ltd**

---

# 1 INTRODUCTION

## 1.1 Scope of Work

- 1.1.1 This framework for a Water Vole Mitigation Strategy has been prepared by RPS for SIMEC Uskmouth Power Ltd (SUP) for the proposed development associated with Uskmouth Power Station B (Planning application reference: 20/0748).
- 1.1.2 The development proposal comprises the conversion of the coal fired power station, the erection of four silos in the coal stockyard, the installation of a de-dusting building, an extension to rail unloading facility, and the installation of new above ground conveyors. The development proposal is detailed on the Proposed SUP Site Plan (Reference 019784-RPS-SI-ZZ-DR-A-5003).
- 1.1.3 The development includes the construction of four silos, in a north-south orientation, in the centre of the coal stockyard within the central part of the power station landholding. This is currently an area of bare ground that has been subject to high levels of activity during the operation of the coal fired power station.
- 1.1.4 The survey of the ditch channels within the power station in 2019 confirmed the presence of water vole colonies in the two locations; one in the western boundary ditch adjoining the coal stockyard (adjacent to the development area) and a second the central section of the South Drain, over 200m from the development, as shown in Figure 1 Ref ECO00312-ECO-008.
- 1.1.5 This outline strategy has been prepared to set out the measures that would be adopted to help conserve the water vole population and minimise impacts on the water vole colony in the western boundary ditch both during construction and operation.

## 1.2 Legislation

- 1.2.1 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally or recklessly:
- Capture, kill or injure water voles;
  - Damage, destroy or block access to their places of shelter or protection;
  - Disturb a water vole while occupying a structure or place which it uses for shelter or protection; or,
  - Obstruct access to any structure or place which a water vole uses for shelter or protection.
- 1.2.2 The water vole is also a UK Biodiversity Action Plan (BAP) priority species and a Species of Principal Importance for conservation in Wales under Section 7 of the Environment (Wales) Act 2016.

---

## 2 POTENTIAL IMPACTS

### 2.1 Western boundary ditch

- 2.1.1 The survey of the western boundary ditch that adjoins the coal stockyard confirmed the presence of a colony of water vole in one section, containing two areas with evidence of activity in close proximity to each other.
- 2.1.2 Signs of water vole were runs along the southern bank with two piles of fresh feeding piles and a single latrine (<20 droppings). No burrow entrances were found in the reed and tall herb vegetation on the sides of the ditch.
- 2.1.3 The opposite bank (located within the Newport Wetlands land ownership) has a stand of reed along the base of the bank with continuous dense bramble thicket on the upper bank.
- 2.1.4 The ditch habitats to the west and east of the coal stockyard currently have lower suitability as habitat for water vole.
- 2.1.5 A 30m long section of ditch enclosed by dense shrubs and overhanging tree canopies creating a continuous cover, lies to the east of the section supporting a water vole colony. The shading is inhibiting the establishment and growth of emergent plants in this section of channel and provides very limited cover and food for water voles.
- 2.1.6 An open section of ditch extends for a further 250m to the west of the recorded colony adjacent to the boundary of the coal stockyard.
- 2.1.7 Further to the west the ditch comprises the following sections:
- 30m section of ditch shaded by mature scrub
  - 325m section with dense continuous reed with part of the channel increasing in width to form a wider reedbed area, approximately 780m<sup>2</sup> in extent
  - 84m within broadleaved woodland further to the west
- 2.1.8 At the western end the boundary ditch links to a 75m section of heavily overgrown ditch lined by tall herbs (within the Newport Wetlands) which connects to an outfall into saltmarsh on the edge of the Severn estuary.

### 2.2 Permanent Habitat Loss

- 2.2.1 No water vole habitat would be temporarily or permanently damaged by the development proposals, with the boundary ditch separated from the working area and protected by the retained boundary ditch that forms the perimeter of the coal stockyard.
- 2.2.2 There would be no crossings of the ditch or permanent fragmentation of water vole habitat. Following the completion of the construction, the existing water vole habitat will maintain the carrying capacity for water vole in the absence of mitigation/enhancement connected to the development.

### 2.3 Potential Disturbance

#### Construction

- 2.3.1 During the construction of the silos in the coal stockyard there is the potential for temporary indirect impacts on water voles, primarily from noise generated from the piling.
- 2.3.2 Four silos will be constructed in a series orientated north south. The furthest will be over 100m from the boundary ditch and the closest will be approximately 20m from the top of the ditch bank.

- 
- 2.3.3 Noise modelling for the southernmost silo, based on auger piling method, indicates that approximately 260m of ditch channel would be subject to moderate noise levels during piling (note that augured piling is a relatively steady noise). The majority of this stretch would be between 55dB and 60dB (60dB is equivalent to normal conversation or a moderate wind in trees). A short section of ditch, 65m, would be subject to noise levels between 60dB and 65dB (a shower or rainfall is equivalent to 70dB). Piling for the three other silos located further from the ditch would result in lower noise levels.
- 2.3.4 Research into the features and parameters of the outer, middle, and inner ear of water voles (Journal of Morphology 262:770–779, 2004) found that as a species they are best tuned to frequencies of about 8–16 kHz with a high-frequency cut-off at about 50–60 kHz. It was also found that the sensitivity to noise was intermediate, but as would be expected, more sensitive than house mice living in often noisy residential houses.
- 2.3.5 It is unknown whether the noise and vibration associated with piling could result in a high enough level of disturbance for water voles to disperse from the section of ditch adjoining the southern boundary of the coal stockyard. It seems unlikely, however, when related to noise that happens naturally in the environment and given the fact that the water vole colony is in close proximity to the coal stockyard.
- 2.3.6 Water voles are highly territorial and exhibit high fidelity to breeding territories. Where the level of impact is minor the breeding females would be expected to remain in burrows in the ditch during piling. Males range more widely and may be more likely to disperse.
- 2.3.7 The extent to which development activities result in water vole dispersal along the boundary ditch channel will be determined by the level of disturbance and duration of the impact. Water voles are known to habituate urban environments, with known colonies adjacent to busy trunk roads and motorways, which are much noisier environments.
- 2.3.8 Construction will also result a temporary increase in human activity in the coal stockyard when the silos are being installed along with the associated hardstanding. When considered in the context of the operational use of this area of the site, any colony present in this location will be habituated to the regular movement of people and the trafficking and noise of vehicles. Many water vole colonies are known to thrive in urban environments where individuals will not be particularly sensitive to human activity within these locations.
- 2.3.9 Following a precautionary approach based on noise modelling it is considered that there is a potential for impact on water vole within 120m of the piling location. The levels of disturbance likely to result in disturbance and requiring mitigation will be defined in the detailed design stage following confirmation of the works specifications and duration.

## Operational

- 2.3.10 During operation the boundary ditch will fall within a dark corridor with the lighting specifications designed to prevent light spill onto the ditch or banks.
- 2.3.11 Human activity will be limited to security and maintenance operations and will be at a low level within areas set back from the ditch by at least 10m.
- 2.3.12 During the operational stage, the management of the ditch banks required to maintain and enhance the value of the ditch habitat for water voles would be the most disturbing activity for the individuals in the colony. This type of management would be typically be undertaken once every few years both for conservation and operational reasons.

---

## 3 STRATEGY

### 3.1 Overview

- 3.1.1 The focus of the strategy is the enhancement of the currently sub-optimal sections of boundary ditch to the west of the water colony alongside of the protection of the existing ditch channel, bank habitats and water quality in the section adjoining the coal stockyard.
- 3.1.2 This strategy provides mitigation to address the potential for disturbance to result in water voles leaving burrows during piling and moving to alternative habitat along the same section of ditch.
- 3.1.3 The enhanced habitat is contiguous with the section subject to indirect noise disturbance. Where disturbance is temporary and there is no physical change to the value or suitability of the original ditch habitat, if any individuals were affected, re-colonisation of the original burrows would be expected shortly after the source of disturbance has been removed.
- 3.1.4 The direct connection between the colony and areas of enhancement would ensure that species protection is built into the programme for development. Therefore, the strategy is precautionary, as it is possible that the colony may remain in the section of ditch close to the working area due to their tolerance of indirect disturbance and high fidelity to home ranges.
- 3.1.5 Ahead of the construction phase up to date information on the distribution and status of the water vole population will be obtained to underpin the detailed specifications for mitigation the programme for implementation.
- 3.1.6 The strategy would specifically avoid physical exclusion or displacement of water voles as that would require much greater levels of disturbance to the colony involving the temporary degradation of the ditch habitats through the cutting back of vegetation; removal of cover, and reduction in food availability.
- 3.1.7 In this instance alternative habitat is available and accessible, and there is no direct impact on the water vole's habitat, then species protection will be provided through facilitating connectivity and creating a robustly fenced buffer zone (5-10m wide) between the edge of the working area and the top of the ditch bank, to ensure no direct disturbance of the ditch bank.

### 3.2 Population Assessment

- 3.2.1 A population assessment would be carried out at least 12 months prior to piling activity in the coal stockyard. This will inform a detailed mitigation strategy with defined construction work programme and detailed programme for associated mitigation measures. Ideally, one survey would be in the first half of the season (mid-April – June) and a second (July – September).
- 3.2.2 The follow up water vole surveys will identify the extent of use by water voles prior to the start of works. The level of activity recorded in 2019 was relatively limited but confirmed the presence of a at least a small colony.

### 3.3 Advanced Habitat Enhancement

#### Selection for Enhancement

- 3.3.1 A 350m long section of the western boundary ditch will be subject to targeted enhancement for water voles. This section is currently a 35m long section of heavily shaded channel overhung by trees and dense scrub and a 325m long section of channel with mats of dense reed and minimal unvegetated open water. A section of this channel widens into a reedbed area approximately 781m<sup>2</sup> in extent on the line of the ditch.

- 
- 3.3.2 The area of habitat enhancement is greater in length than the section subject to the potential for noise disturbance during piling, on a precautionary basis.
- 3.3.3 The proposed ditch enhancement area has been assessed as suitable for improvement for water voles for the following reasons:
- Established mature vegetation (reed) – providing cover and food source
  - Ditch profile equivalent to the section supporting water vole
  - Open water all year round but not subject to flooding
  - Stable vegetated banks
  - Negligible levels of disturbance with the section of ditch to be enhanced very infrequently accessed during operations.
- 3.3.4 Enhancement will be delivered through the following measures
- Establishment of open water on the northern side of the ditch through the partial casting of dense continuous stands reed growing in silts in the channel in three 75-100m long sections.
  - Management of sections of the northern bank to reduce the dominance of reed to increase extent of grassland and herbaceous vegetation along the northern bank
  - Cutting back of overhanging branches and scrub to significantly reduce the levels of shading
  - Selective removal of shrubs growing on the bank of the ditch channel - but retaining the adjoining woodland and scrub habitat beyond the top of the northern bank
- 3.3.5 Enhancement would be completed 6 – 12 months prior to piling in the coal stockyard. The outcome of the proposed measures would be subject to review against the required conditions for water vole. The assessment will confirm the depth and extent of open water, bankside vegetation and overall quality of the habitat.
- 3.3.6 Any remedial actions such as additional planting and reinstatement of coir rolls would be implemented to ensure that an extensive part of the western boundary ditch is providing good quality alternative habitat from the start of construction activities in the coal stockyard, for the duration of construction and ultimately over the operational life of the development.

## 3.4 Species and Habitat Protection

- 3.4.1 The protection of the physical structure of the boundary ditch is central to the strategy to minimise impacts on individual water voles and the colony. A Heras fence would be installed between the working area and the ditch. It will be aligned to have a minimum stand off of 7m from the top of the ditch bank which will be increased to 10m wherever practical.
- 3.4.2 The fence would be installed prior to the start of any works relating to the development in the coal stockyard with clear signage to define its function and that it defines a construction exclusion zone with no unauthorised access for contractors.
- 3.4.3 The stand off area and fencing would be subject to frequent inspections to check the stand off, fencing condition and signage. The inspections would be documented and any maintenance required will be promptly implemented.
- 3.4.4 The vegetation in the section of ditch bounding the coal stockyard would not be subject to management during the period of piling to avoid additional temporary disturbance.

---

## 3.5 Outline Mitigation Programme

- 3.5.1 A detailed delivery programme for survey, enhancement and construction would be prepared as part of the detailed design once the specification and timing of the piling and construction works have been defined. The detailed water vole strategy would be prepared at this stage and would be required under an anticipated planning condition.
- 3.5.2 The enhancement of the western section of the boundary ditch would be carried out at least 6 months prior to the start of construction in the coal stockyard followed by monitoring in the growing season to assess the quality of the modified ditch habitats following targeted enhancement.
- 3.5.3 Protection measures for the section of the boundary ditch adjoining the coal stockyard would be installed prior to any enabling works or development activities within the coal stockyard and would remain in place until the completion of the construction of the silos and associated terrestrial habitat creation.
- 3.5.4 Water vole population monitoring would be carried out each year during construction and for at least three years post-construction.

## 3.6 Long term Habitat Management

- 3.6.1 Long term management of the western boundary ditch would be brought forward to maintain the value of 500m section of boundary ditch on the perimeter of the power station landholding with the emphasis on maintaining and improving the conservation status of the water vole population in the ditch.
- 3.6.2 A ditch management plan would be prepared setting out the specifications for each management action as a simple document that will be straightforward for contractors to implement.
- 3.6.3 The aim would be to maintain largely unshaded channel with open water and fringes of marginal vegetation.
- 3.6.4 Key management actions would be
  - Management of reed extent to maintain open water and mixed species herbaceous vegetation on the significant lengths of the ditch bank
  - Localised removal of scrub where there is significant over-shading
  - Periodic cutting back of bramble from encroaching into the channel from the southern bank (subject to agreement from NRW/RSPB)
  - Grassland / scrub cutting will be undertaken in early spring and before the first of March, when water voles will be less active and before the bird nesting season
  - Control any colonisation by invasive non-native plant species to eradicate these species from this area of the site

## 3.7 Monitoring

- 3.7.1 Water vole monitoring would run concurrently with construction/piling and continue into the post-construction period to assess the use in the section subject to temporary disturbance and the enhanced habitats. The extent to which individuals disperse from and move back into the ditch alongside the coal stockyard will be recorded and the results shared with NCC and NRW.
- 3.7.2 Monitoring surveys would be carried out in either May or September and would record and map signs of use by water voles in the ditch adjoining the development and in the section of enhanced ditch channel. Monitoring would record burrows, latrines, feeding piles and runs and would provide an overall assessment of levels of use in each section.



- 
- 3.7.3 The outcomes of ongoing habitat management would be assessed and documented. If additional actions are required to meet the conservation objective for the water vole population (or other species) then modifications to the management plan will be proposed through consultation with the Newport City Council ecologist.
  - 3.7.4 The findings of each round of monitoring will be written up as a brief report and submitted to Newport City Council and NRW.

### **3.8 Delivery of strategy**

- 3.8.1 The delivery of the strategy is fully in the control of SUP. Although the ditch lies on an ownership boundary the north side of the channel and north bank fall entirely within the power station ownership boundary.
- 3.8.2 This ensures full accessibility for both the initial enhancement works and ongoing management including access routes for contractors and machinery.
- 3.8.3 The detailed strategy will define the responsibilities and provide named representatives who would be the point of contact for NCC, subject to updating following any changes in personnel.
- 3.8.4 Enhancement, monitoring and ongoing ditch management and monitoring would be fully funded by SUP.
- 3.8.5 The findings and outcomes of monitoring and management would be documented with copies provided to NCC.
- 3.8.6 Enhancement would be fully implemented in advance of a development and subject to compliance checks. The delivery of improvements to currently sub-optimal habitat with direct connectivity to the colony will lead to a permanent improvement in the extent of suitable habitat providing an overall gain for water vole habitat over the operational life of the development.