

Visual Impact Provision (VIP)

Peak District (East) Project)

Appendix 7G Water Vole and Otter Survey Report

October 2018 Rev03

Quality information

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The conclusions and recommendations contained in this Report take into account information provided by the Client about the Proposed Project and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report.

The methods adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken in June 2016 and August 2018, and is based on the conditions encountered and the information available during those periods. The scope of this Report and the services are accordingly factual and therefore be subject to minor limitations as detailed in Section 3.4.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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1. Introduction

1.1 The Proposed Project

AECOM was instructed by National Grid to conduct a water vole (*Arvicola amphibious*) and otter (*Lutra lutra*) survey at Dunford Bridge, South Yorkshire (centred approximately on Ordnance Survey grid reference 416540 402440). The survey was undertaken as part of the Phase 2 protected species surveys to inform the Visual Impact Provision (VIP), Peak District (East) Project (hereafter referred to as the 'Proposed Project'). The Proposed Project is described in detail in Chapter 2 of the Environmental Assessment Report (EAR).

Habitat suitable for supporting water vole and otter was identified during an initial Preliminary Ecological Appraisal (PEA) of the Survey Area undertaken by AECOM in November 2016. The habitat considered suitable for these species comprised the River Don, its tributaries and a ditch adjacent to the Trans Pennine Trail. These watercourses and the adjacent broadleaved woodland provides suitable commuting, foraging and resting/breeding habitat for otter and suitable foraging and burrowing habitat for water vole. Background information on water vole and otter ecology is provided in Appendix A.

1.2 Defining the Study and Survey Areas

Within this report the following terminology is used:

- Ecological Study Area – the area which was subject to the collection of background information (desk based study) to supplement the findings of the field surveys, comprising the Survey Area plus a 2km radius.
- Water Vole and Otter Survey Areas – these are the locations where habitat suitable for supporting water vole and otter were identified during the PEA and were surveyed during the water vole and otter survey (hereafter referred to as the 'Survey Area'). This is shown on Figure 7G.1.

1.3 Survey Aims and Objectives

The aim and objectives of the survey work and the subsequent report presented herein were to:

Aim

- To determine the status and distribution of water vole and otter within the Survey Area in order to inform the Ecological Impact Assessment (EcIA).

Objectives

- Undertake a Desk Based Study including review of existing ecological data to identify any records for water vole and otter within the Ecological Study Area;
- Identify the presence or absence of water vole and otter within the Survey Area using recognised survey methodologies; and
- Evaluate the survey results to determine the nature conservation value of water vole and otter with respect to the Proposed Project.

2. Legislation and Planning Policy

2.1 Relevant Legislation

2.1.1 Water Vole

Water vole receives full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended), as such it is illegal to intentionally kill, injure, or take (capture) a water vole; possess or control live or dead water vole, or any part of a water vole or anything derived from a water vole; intentionally or recklessly damage, destroy, or obstruct access to any structure or place which a water vole uses for shelter or protection; intentionally or recklessly disturb a water vole while it is occupying a structure or place which it uses for shelter or protection.

Due to the water vole's protection, it is necessary to identify if they are utilising watercourses affected by the Proposed Project prior to any works commencing and if present, to assess the likely effects of the works on water vole. If water vole is identified and will be affected by the proposed works, appropriate mitigation would be required and it may be necessary to apply to Natural England for a licence if effects cannot be avoided and translocation of water voles is required.

2.1.2 Otter

Otter and their resting places receive protection under both British and European legislation. Under European legislation the otter is protected under EC Directive (92/43/EEC), being listed under Annexes IIa and IVa. This is implemented in Britain under the Conservation of Habitats and Species Regulations, 2017. Under this legislation it is an offence to damage or destroy an otter's place of shelter, whether intentionally or accidentally and to deliberately disturb an otter. The otter is listed under Annexe II of the Bern Convention and is also protected under Schedule 5 and 6 of the Wildlife and Countryside Act, 1981 (as amended). Under the Wildlife and Countryside Act, 1981 (as amended) it is a criminal offence to 'intentionally' kill, injure, or take an otter without a licence. It is also illegal to damage, destroy, or obstruct access to a place used by an otter for shelter or protection.

Due to the otter's protection, it is necessary to identify if they are utilising watercourses affected by the Proposed Project prior to any works commencing and if present to assess the likely effects of the works on otter. If otter is identified and will be affected by the proposed works, appropriate mitigation would be required and it may be necessary to apply to Natural England for a European Protected Species (EPS) development licence.

2.1.3 NERC Act, 2006

The Natural Environment and Rural Communities (NERC) Act (2006), as amended, put an obligation on public bodies to have regard, so far as is consistent with the proper exercise of their functions, to the purpose of conserving biodiversity. Under the terms of the Act, conserving biodiversity includes restoring or enhancing populations and/or habitats. The local planning authority (LPA) or other determining authority must therefore consider the effects of planning applications upon biodiversity and how it can be mitigated for or enhanced.

A list of species and habitats 'of principal importance for the purpose of conserving biodiversity' is published under Section 41 of the NERC Act (2006). The list which includes 56 habitats and 943 species has been drawn up in consultation with Natural England and draws upon the previous UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats which is now obsolete.

Water vole and otter are both listed as priority species on the NERC Act, 2006.

2.2 Planning Policy

The revised National Planning Policy Framework (NPPF) was published on 24th July 2018 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this it to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

2.2.1 Local Biodiversity Action Plan (LBAP)

Barnsley Local Biodiversity Action Plan (LBAP) is in the process of being revised (the final revised version was not available as of October 2018). Water vole and otter are currently listed as local priorities on the LBAP.

The Peak District Local Biodiversity Action Plan 2011 – 2020 also lists otter and water vole as priority species.

3. Methodology

3.1 Desk Study

A data search was conducted in November 2015 as part of initial ecological survey work conducted for the Proposed Project. Numerous ecological consultees were contacted to request ecological data for the Survey Area and surrounding area (up to 2km from the Survey Area), known as the Ecological Study Area. The following consultees were contacted:

- Barnsley Biological Records Centre/Barnsley Metropolitan Borough Council (BMBC);
- Peak District National Park Authority (PDNPA); and
- National Biodiversity Network (NBN) gateway.

The desk study was restricted to post 2005 records, so that the data collated would be more likely to reflect the current (rather than historic) baseline conditions associated with the Survey Area. Further species records for 2016-2018 were obtained from Barnsley Biological Records Centre in August 2018 to supplement existing data, however no records for these species were returned for this time period.

3.2 Field Survey

A systematic walkover of the Survey Area (Figure 7G.1) was undertaken by AECOM ecologists on 18 July 2016, to assess the suitable habitats identified during the PEA. July is within the optimal survey time for identifying water vole breeding territories and a suitable time for surveying otter. The optimal period for water vole surveys is April to October inclusive (Strachan and Moorhouse, 2011). Surveys for otter can be undertaken all year round, dependent on vegetation cover and suitable weather conditions.

The survey was undertaken in weather conditions considered suitable for conducting otter and water vole surveys i.e. dry and mild. There were no periods of heavy rainfall leading up to the survey, which could have washed field signs away.

All suitable watercourses were surveyed; any watercourse that was considered unsuitable at the time of survey (e.g. no suitable vegetation, unsuitable bank structure and completely dry) was ruled out from further surveys.

The survey involved walking along both banks, where possible, of all the watercourses within the Survey Area searching for signs of water vole and otter presence. Watercourses were searched up to 2m from the water's edge where accessible. Where conditions allowed, a surveyor walked in the watercourse channel to check for field signs along the water's edge.

A standard survey form (adopted from Strachan and Moorhouse, 2011) was used to record water vole and otter field signs. The form provides background, habitat and supplementary wildlife information. It also includes an assessment of water quality, bankside vegetation and connectivity to other watercourses, as well as assessing the potential of the watercourse to support prey species for otter. A sketch map of each watercourse can be drawn on the form, on which the position of the field signs can be marked, as well as vegetation types and any major physical features.

3.2.1 Water Vole Survey Methodology

Water vole surveys were undertaken following guidance provided in the Water Vole Conservation Handbook (Strachan and Moorhouse, 2011).

The survey methodology involved recording all evidence of water vole activity, which is detailed below.

- **Faeces** – these are 8-12mm long and 4-5mm wide, with a smooth 'tic tac' like shape, varying in colour from green to black, and odourless with a putty-like texture;
- **Latrines** – found throughout the territory, often comprising a pile of flattened droppings, with fresh droppings on top;
- **Feeding stations** – comprise a neat pile of chewed feeding remains, often comprising lengths of vegetation up to 10cm long, showing the marks of the two large incisors;

- **Burrows** – these are typically wider than they are high, with a diameter of 4-8cm, and are usually located along the water's edge;
- **Lawns** – around burrows there is often an area of grazed vegetation, surrounded by taller vegetation, these are most often produced when the female is nursing young;
- **Nests** – these comprise a large ball of shredded material, often woven into the bases of rushes and reeds, and are normally found in areas where the water table is high, such as wetlands;
- **Footprints** – as with other rodents, the footprints of the fore foot, show four toes in a star arrangement, with the hind foot showing five toes. The size of footprints for the hind foot is 26-34mm;
- **Runways** – these are low tunnels within the vegetation, often adjacent to the water's edge; and
- The presence of water vole can also be confirmed by sightings and from the characteristic 'plop' of the water vole entering the water, which acts as a warning to other voles.

3.2.2 Otter Survey Methodology

Otter surveys were undertaken following guidance provided in the Environment Agency's Fifth Otter Survey of England 2009-2010 (Crawford, 2010) and monitoring the Otter (Chanin, 2003b).

The survey methodology involved recording all evidence of otter activity, which is detailed below.

- **Spraints** – These are usually black in colour and have a sweet smell likened to jasmine or fresh cut hay. The otter uses spraints to define its home range, and are located at prominent points such as on boulders and ledges;
- **Footprints** – The otter has five toes that are webbed. The footprints are very characteristic and easy to recognise. Each print is around 50-60mm wide;
- **Paths** - found along river banks;
- **Couches**- Flattened vegetation amongst scrub or dense vegetation, which may indicate an above ground resting area for an otter during the day;
- **Holts** - Holes in the riverbank, hollow trees, cavities amongst tree roots, piles of rocks, wood or debris may all be used as holts; and
- **Feeding remains** – including fish remains.

The presence and distribution of these signs can be used to assess the likely importance of the watercourse for the local otter population.

3.3 Evaluation Methodology

The method of evaluation that has been utilised has been developed with reference to the Chartered Ecology and Environmental Management CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018). These give advice on scoping and carrying out environmental assessments and place appraisal in the context of relevant policies. Data received through consultation, desk-based studies and field-based surveys are used to allow relevant ecological features (i.e. designated sites, ecosystems, habitat and species) of value (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

Ecological features; in this case water vole and otter may be important for multiple different reasons (e.g. rarity in a particular geographic context; role in habitat connectivity; or a species on the edge of their range). Relevant reasons for which an ecological feature is important are described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference:

- international (i.e. European);
- national (i.e. England);
- regional (i.e. Northern England);
- county (i.e. South Yorkshire/Derbyshire);
- district (i.e. Barnsley Metropolitan Borough/Dark Peak)
- local (i.e. Survey Area and up to 2km radius); and

- negligible (used where the value is lower than the Local level).

3.4 Survey Limitations

Ecological surveys are limited by factors which affect the presence of animals such as the time of year, migration patterns and behaviour. Therefore, absence of evidence is not always conclusive proof that the species is not present or that it will not be present in the future. Nevertheless, the results of this survey have allowed an evaluation of the potential for water vole and otter to be present and whether there will be an impact in relation to the Proposed Project. Some small sections of the River Don and the adjacent woodland were considered too hazardous to survey due to the very steep banks, dense bankside vegetation and deep water, making it impossible for surveyors to safely assess these areas. However, spot checks were made along the bankside in accessible areas and the woodland was surveyed by eye from the opposite side to the bank, thus providing sufficient data to assess species presence within the area.

4. Results

4.1 Desk Study

Peak District National Park Authority (PDNPA) provided numerous water vole records for within the Ecological Study Area, whereas there were no records for water vole from within the Ecological Study Area in the records provided by Barnsley Biological Records Centre . Table 4.1 provides a summary of the results obtained.

Table 4.1: Records relevant or potentially relevant to the Proposed Project

Consultees	Date of Record	Details	Location
PDNPA	2003	Twenty three records of water vole latrines and feeding stations along a small moorland stream	Located approximately 320m from the Survey Area between grid references 418010 400880 and 418350 400860
	2003	Five records of water vole latrines and feeding stations along a small moorland stream	Located approximately 750m from the Survey Area between grid references 417290 401370 and 417130 401300
	2003	Six records of water vole latrines and feeding stations along a small moorland stream	Located approximately 1km from the Survey Area between grid references 416910 401080 and 416970 401110

Neither PDNPA nor Barnsley Biological Records Centre provided records for otter within the Ecological Study Area. In addition the 'Fifth Otter Survey of England 2009 – 2010' indicated that there are few if any otters within the River Don catchment (Crawford, 2010).

4.2 Field Survey

Figure 7G.1 shows the watercourses included in the Survey Area. Photographs of the watercourses /habitats surveyed are provided in Appendix B. Habitat information on the watercourses surveyed and a summary of the survey results is provided in Table 4.2.

No water vole or otter field signs were identified within the Survey Area during the survey. Furthermore no incidental water vole or otter field signs have been recorded within the Ecological Survey Area during the completion of other ecological surveys between October 2015 and September 2016.

The River Don and Tributary 9 have potential to support commuting and foraging use by otter as they are sufficiently connected to the wider catchment and to local potential hunting/foraging areas and subsequently may be used as corridors for otter movement. Due to the presence of suitable habitat it is possible that otter may use the Survey Area for foraging and as a commuting route on a transient basis; although no evidence was identified to confirm this and records indicate likely absence from the River Don catchment (Crawford, 2010).

Eight of the 11 watercourses surveyed were assessed as being unsuitable for water vole based upon the lack of features suitable for burrow creation, stony substrate and limited aquatic vegetation. The remaining three are sub optimal and are unlikely to support this species, due to the lack of water vole signs and the relative isolation to other potential water vole populations present in the wider area.

Table 4.2: Habitat information for the watercourses surveyed

Watercourse	OS eastings and northings	Habitat Type	Shore Type	Current	Width	Mean Water Depth	Bank profile	Comments	Evidence of Water Vole or Otter?	Likelihood of Otter Presence	Likelihood of Water Vole Presence
River Don	417832 402677 to 415904 402432	Main River	Stones/ Earth/ Rock	Fast	2-5 m	<0.5 m	Steep >45°	Some banks suitable for water vole	No	Potentially Present due to connections with other waterbodies which may support otters.	Likely absent, lack of water vole signs
Tributary 1	417626 402535	Stream	Earth	Fast	<1 m	<0.5 m	Vertical	Very marshy	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable as only marshy grassland
Tributary 2	417320 402577	Stream	Earth	N/A	N/A	N/A	N/A	Water runs underground	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable as runs underground
Tributary 3	417144 402555	Stream	Earth	N/A	N/A	N/A	Vertical/ undercut	Upland stream with no water at time of survey	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable due to steep cut banks and dry
Tributary 4	416874 402468	Stream	Earth	N/A	N/A	N/A	N/A	Upland stream with no water at time of survey	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable as dry
Tributary 5	416680 402224	Stream	Boulder	Fast	1-2 m	<0.5 m	Vertical/ undercut	Unsuitable due to undercut banks	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable due to impenetrable rocky banks
Tributary 6	416488 402337	Stream	Earth	Dry	N/A	N/A	Vertical	Dry	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable as dry
Tributary 7	416285 402299	Stream	Earth	Fast	<1 m	<0.5 m	Vertical/ undercut	Unsuitable	No	Likely absent due to the isolated nature of the tributary.	Likely absent, stream unsuitable as too shallow

Watercourse	OS eastings and northings	Habitat Type	Shore Type	Current	Width	Mean Water Depth	Bank profile	Comments	Evidence of Water Vole or Otter?	Likelihood of Otter Presence	Likelihood of Water Vole Presence
Tributary 8	416219 402307	Stream	Stones/ Earth	Fast	1 m	<0.5 m	Vertical		No	Likely absent due to the isolated nature of the tributary.	Likely absent, lack of water vole signs
Tributary 9	415958 402344	Stream	Boulder /Stone/ Earth	Fast	1-2 m	<0.5 m	Vertical		No	Potentially present due to connection with the reservoir which may, provide potential foraging/hunting habitat for otters.	Likely absent, lack of water vole signs
Trans Pennine Trail Ditch	416834 402512	Ditch	Earth	Slow	1 m	<0.5 m	Shallow <45°		No	Likely absent due to the isolated nature of the ditch.	Likely absent, ditch unsuitable as too shallow

5. Evaluation

Habitat suitable for supporting water vole and otter was recorded during the survey and the data search revealed that water vole has historically been recorded within 1km of the Survey Area. No records of otter were returned during the data search and the 'Fifth Otter Survey of England 2009 – 2010' indicated that there are few if any otters within the River Don catchment (Crawford, 2010).

No evidence of the presence of water vole or otter was identified within the Survey Area during the July 2016 survey, therefore they are not considered to represent a valued ecological feature or significant constraint to the Proposed Project. However, as surveys can only provide a snap shot of activity at that particular time, absence of water vole and otter evidence should not be taken as conclusive proof that these species are entirely absent and that they will not be present in the future should suitable habitat conditions exist, particularly in the case of water vole with the closest desk study record being approximately 300m from the Survey Area.

In respect of the evaluation of these species as ecological features within the context of the EcIA, as population(s) or territories have not been recorded within the Survey Area it is not formally appropriate to value water vole or otter as ecological features. However it is considered that riparian mammals (along with other associated aquatic habitats) which could be supported by the River Don and tributaries should be included in the EcIA. The purpose of this is to recognise the potential sporadic or future occasional presence of these species within the Survey Area (in particular along the River Don) and provide a mechanism to ensure that appropriate precautionary mitigation measures and working practises during the completion of the Proposed Project are adopted. The value of the Survey Area to Riparian mammals, based upon the desk study and surveys, is considered to be no more than Local value.

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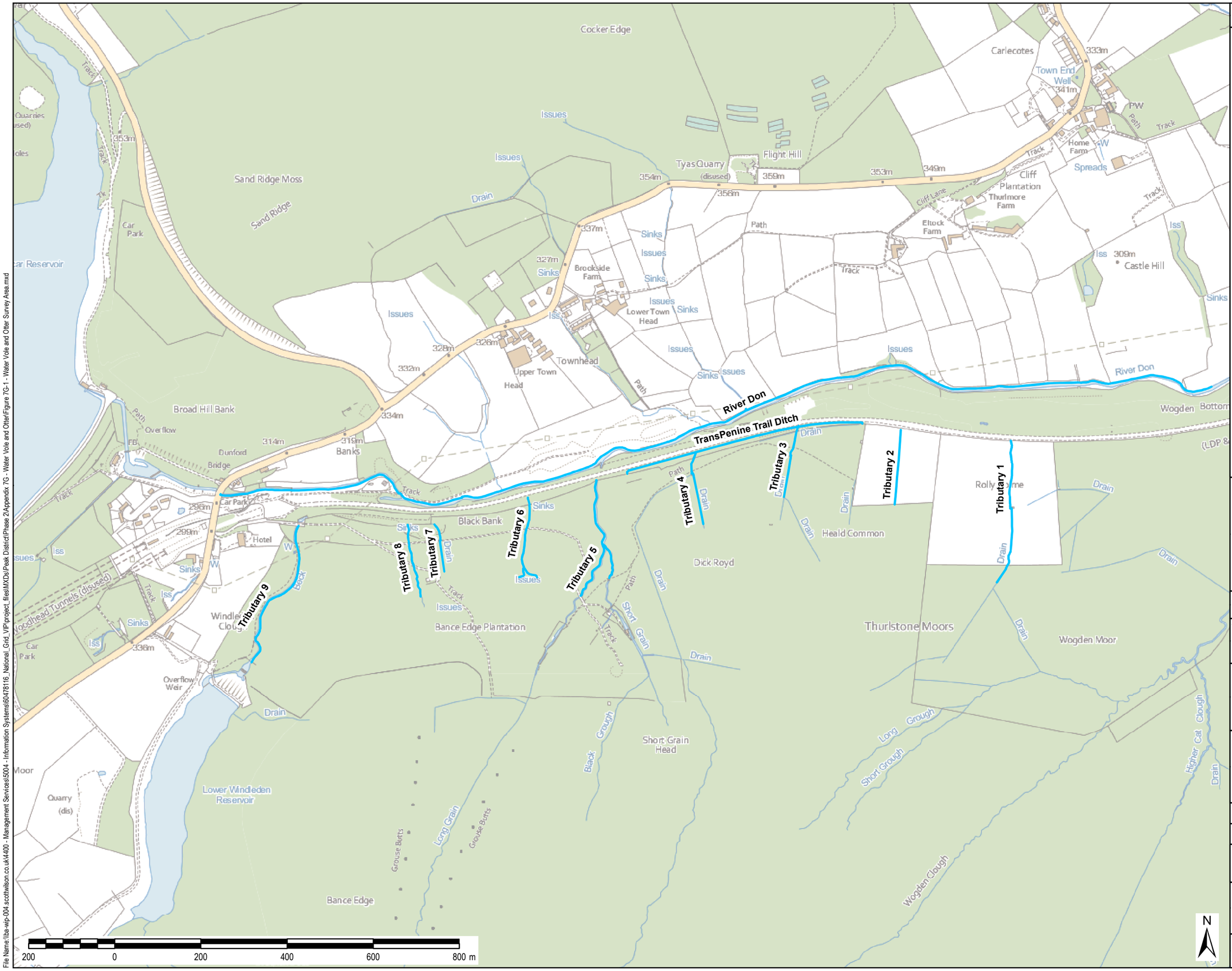
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Figure 7G.1: Water Vole and Otter Survey Areas



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KEY

Water Vole and Otter Survey Area

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Purpose of Issue

FINAL

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Project Title

VISUAL IMPACT PROVISION (VIP) PEAK DISTRICT (EAST) PROJECT

Drawing Title

PEAK DISTRICT EAST VIP WATER VOLE AND OTTER SURVEY AREA

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Appendix A Background to Species Ecology

Water Vole

Water voles live a semi-aquatic lifestyle and mainly inhabit linear waterbodies including streams, rivers and ditches. Within these habitats they live in colonies with linear ranges. They can also occupy wetlands including reed beds where their ranges are more two-dimensional, these colonies are formed of a series of adjacent linear territories. Breeding females are territorial while males are not having ranges which overlap the territories of many females. Depending on overall population density, season and habitat quality, the length of territory varies between 30m to 150m for females and home range from 60m to 300m for males (Strachan and Moorhouse, 2011)

Water voles create burrows in the waterbody bank and are herbivorous mainly feeding on waterside vegetation, consequently they prefer watercourses with plenty of aquatic and bank vegetation, this vegetation provides an abundant food source as well as shelter and protection from predators. In addition they favour watercourses with generally a slow to moderate flow, not shallow, not over-shaded by trees and with easily penetrable banks for their burrows (Strachan and Moorhouse, 2011).

Signs that indicate the presence of water vole include burrows, runs, footprints, latrines and grazed lawns. Water voles will generally create many entrances/exits to their burrows, one at the water's edge and one on top of the bank. Burrows will also contain many interconnecting tunnels, nest chambers and food storage chambers (Strachan and Moorhouse, 2011). When a water vole is not within its burrow it will either swim or run along paths adjacent to the water's edge, forming a clear run. Footprints may be seen in silty soil along these runs as well as latrines which are a pile of droppings; these may be seen adjacent to their burrow holes or on emergent islands within the waterbody. A breeding female with generally have around six latrines within their territory (Strachan and Moorhouse, 2011). Whilst grazing outside their burrows water voles may produce a grazed lawn, the vegetation within this lawn will be cut at a fairly distinctive 45° angle.

Water voles are active throughout the year, although during the winter they will spend the majority of their time within their burrows, making them more difficult to detect. They are most active during the breeding season between March and October where they will have multiple litters (between two and five (Strachan and Moorhouse, 2011)).

The main threats to water voles include habitat loss, degradation and fragmentation as well as predation from American mink (*Neovision vision*). Changes in the management of a waterbody including mowing, vegetation clearance and overgrazing can damage water vole habitat (Strachan and Moorhouse, 2011).

Otter

Otters have been recorded to utilise all types of waterbodies including small streams, rivers, ponds, lakes and wetlands, they predominantly use these habitats for foraging/hunting or commuting to hunting areas. They often use areas of woodland or dense scrub to locate their holts (underground resting site) or 'rest-up' in a couch (above ground resting site) during the day. Otters will use a variety of structures as a holt such as, a cavity within the root system of a tree, or a large cavity in a collapsed wall, or they may rest-up in dense scrub or reed beds. Often holts are located close to waterbodies between 10m and 50m away, although natal dens used for giving birth have been recorded 500m from a waterbody. The opportunistic approach which otters take in locating holts and couches may mean that a holt or couch could easily be over looked (Chanin, 2003a).

Otters will mainly feed on fish although they may eat amphibians, crayfish, other mammals, birds and reptiles. They will travel fairly long distances to reach their food sources and may even travel long distances across land (Chanin, 2003a).

Signs that indicate the presence of otter include otter spraint, feeding remains, footprints, otter paths and holts or couches. Otter spraint may be found in obvious locations within a watercourse including on banks, on a large boulder in the middle of a stream or under bridges. Otters use their spraint as a way of marking their territory, therefore it is beneficial for them to spraint in areas which are obvious to other otters and which are unlikely to wash away. Feeding remains such as a carcass of a fish may be found on the bank of a river, although this does not provide conclusive evidence for the presence of otter. Otter footprints may be located in soft silt adjacent to a river. Finally paths running adjacent to or into the waterbody may indicate the presence of otter, although this may be confused with other species of mammal of a similar size (Chanin, 2003b).

Otters are solitary animals with defined territories they will often only associate with other otters during mating or whilst the female is raising its offspring. Due to the elusive nature of otters the exact territory size of an otter is unknown, it is believed that a male otter will have a larger territory than a female. Estimates of a male otter home range may be around 50km whereas a female otter's home range may be 24km (Chanin, 2003a).

The main threats to otters include habitat loss, pesticides, road casualties and disturbance (Chanin, 2003a).

Appendix B Photographs

Photograph 1 – River Don



Photograph 2 – Tributary 1



Photograph 3: Tributary 2



Photograph 4: Tributary 3



Photograph 5: Tributary 5



Photograph 6: Tributary 6



Photograph 7: Trans Pennine Trail Ditch



Photograph 8: Trans Pennine Trail Ditch



Photograph 9: Tributary 8



Photograph 10: Tributary 9



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