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Water Vole and Otter Survey Report

River Mease Catchment Area:
Upper Mease & Pessall Brook

on Behalf of:
Trent Rivers Trust

Date: 25/09/2024

PEG500-07B

River Mease Catchment Area – Upper Mease & Pessall Brook



Document Control

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Water Vole and Otter Survey Report – River Mease

1.0 Non-technical Summary

Background
In July 2024, Pioneer Environment Group Ltd. was instructed to conduct an otter <i>Lutra lutra</i> and water vole <i>Arvicola amphibius</i> survey of two Sites within the River Mease Catchment Area: - Site 1 – Upper Mease, Culloden Farm (centered on grid reference SK 33840 07986, Figure 1) - Site 2 – Pessall Brook (centered on grid reference SK 21838 13363, Figure 2) The survey comprised a thorough walkover and inspection of all watercourses and their immediate surroundings for evidence of otter and water vole presence. A Preliminary Ecological Appraisal (PEA) (PEG500-01B) was undertaken in May 2024 identifying the sites as providing potential habitat for both otter and water vole and should be read in conjunction with this report.
Site Description
Site 1 is situated approximately 1.3km southwest of Snarestone, whilst Site 2 is located approximately 1.4km northeast of Edingale. - Site 1 – Upper Mease, Culloden Farm - o Watercourse 1 – 454m - o Watercourse 2 – 507m - Site 2 – Pessall Brook - o Watercourse 1 – 721m
Development Proposal
The project aims to deliver on objectives set out in the river restoration plan of 2012. The river restoration works aim to improve river channel and riparian habitat, enhance the habitat for the designated features and species along the river, and work to improve water quality. Site 1 (Figure 1) - SK 33591 07954 (upstream) to SK 34029 08090 (downstream) Site 1 comprises a river restoration scheme on a small dairy farm on the Upper Mease. This will include wetland creation and the creation of scallops along Field 1. Bank reprofiling, buffer strip enhancement and set-back outfalls are planned for Field 2 and Field 3. Site 2 (Figure 2) - SK 22138 13696 (upstream) to SK 21742 13071 (downstream) Site 2 is a river restoration scheme at the downstream end of Pessall Brook. Across all fields there will be secondary channel creation, wetland creation, leaky barrier installation and bank reprofiling. A small bund for the purposes of natural flood management may also be installed in Field 4.
Purpose
The purpose of the surveys was to: • Evaluate the presence / likely absence of Otters and Water Voles along each stretch of watercourse. • Identify potential constraints and recommend mitigation, compensation and enhancement measures based on the results of the surveys.

Results and Recommendations**Water Vole**

Though suitable habitat was present, no evidence of water voles was identified at any point over any of the three stretches of water course. As such it is considered that water voles were not present within the sites at the time of the survey and are not considered a constraint to the proposed works.

Otter**Site 1**

No evidence of otters was identified at any point along either of the watercourses within site 1. The species was therefore considered absent at the time of the survey and not considered to pose a constraint to the proposed works.

Site 2

Evidence of otters was identified within the site in the form of three sets of prints in the mud on the side of the channel, and a single otter spraint on a log within the channel at the northeastern end of the site. Though evidence of presence was identified, the level of evidence was very low, indicating that the watercourse had been used for foraging and as a possible commuting route for likely a single otter. No evidence of resting places was identified.

Due to the potential presence of otters within the site, precautionary working methods are recommended to reduce the risk of impact on the local otter population.

2.0 Introduction

- 2.1 In July 2024, Pioneer Environment Group Ltd. was instructed to conduct an otter *Lutra lutra* and water vole *Arvicola amphibius* survey of two Sites within the River Mease Catchment Area:
- Site 1 – Upper Mease, Culloden Farm (centered on grid reference SK 33731 08259, Figure 1)
 - Site 2 – Pessall Brook (centered on grid reference SK 21838 13363, Figure 2)
- 2.2 The survey was undertaken on the 8th August 2024 and comprised a thorough walkover and inspection of all watercourses and their immediate surroundings for evidence of otter and water vole presence.
- 2.3 A Preliminary Ecological Appraisal (PEA) (PEG500-01B) was undertaken in May 2024 identifying the sites as potential habitat for both otter and water vole and should be read in conjunction with this report.

Survey Location

- 2.4 The survey area comprised three stretches of the river Mease, located approximately 1.3km southwest of Snarestone (Site 1) and approximately 1.4km northeast of Edingale (Site 2).
- Site 1 – Upper Mease, Culloden Farm
 - Watercourse 1 – 454m
 - Watercourse 2 – 507m
 - Site 2 – Pessall Brook
 - Watercourse 1 – 721m

Project Overview

- 2.5 The project aims to deliver on objectives set out in the river restoration plan of 2012. The river restoration works aim to improve river channel and riparian habitat, enhance the habitat for the designated features and species along the river, and work to improve water quality.

Proposals

- 2.6 The restoration works will take place in three areas:
- Site 1 - SK 33591 07954 (upstream) to SK 34029 08090 (downstream), and SK 34113 08524 (upstream) to SK 33690 08980 (downstream).
 - Site 2 - SK 22138 13696 (upstream) to SK 21742 13071 (downstream).
- 2.7 Site 1 comprises a river restoration scheme on a small dairy farm on the Upper Mease including wetland creation and the construction of scallops.
- 2.8 Site 2 is a river restoration scheme at the downstream end of Pessall Brook. Across all fields there will be secondary channel creation, wetland creation, leaky barrier installation and bank reprofiling. A small bund for the purposes of natural flood management may also be installed in Field 4 (Figure 2).

Survey Purpose

2.9 The purpose of the survey was to:

- Identify the presence / likely absence of Otters and Water Voles along each stretch of watercourse.
- If present, identify the level of presence and likely use within the works area and immediate surroundings.
- Identify potential constraints to the proposed works and recommend mitigation, compensation and enhancement measures based on the results of the surveys.

3.0 Legislation

- 3.1 Several UK and European policies and legislation control the conservation of biodiversity. This section briefly outlines the legal and policy protection afforded to species and habitats scoped into this survey and described within the report.
- 3.2 The Wildlife and Countryside Act 1981 (as amended by the Countryside Rights of Way Act 2000) is the primary legislation that protects animals, plants, and habitats in the UK. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 additionally lists European Protected Species.
- 3.3 Water voles (*Arvicola amphibius*) are fully protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). This legal protection makes it an offence to:
- Intentionally kill, injure (capture) a water vole.
 - Possess or control a live or dead water vole, or any part of a water vole.
 - Intentionally or recklessly damage or destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.
 - Sell, offer for sale, or advertise for sale live or dead water voles.
- 3.4 Otters (*Lutra lutra*) are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and receive full protection under Section 9. This species is also listed as European Protected Species on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which gives it full protection under Regulation 41. Protection was extended by the Countryside and Rights of Way Act 2000 (the CROW Act).
- 3.5 Under the above legislation it is an offence to:
- kill, injure, or take an individual of such a species.
 - possess any part of such species either alive or dead.
 - intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection, or breeding.
 - intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
 - sell or attempt to sell any such species.
- 3.6 Otters are also included as Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under Section 74 of the CROW Act.
- 3.7 Under the Protection of Badgers Act 1992 it is an offence to disturb, kill, injure, or take a badger or to disturb, damage, obstruct access to, allow a dog to access or destroy a sett.

4.0 Methodology

Desk Study

- 4.1 A full desk study is detailed in the PEA report (PEG500-01B) and comprised the following:
- 4.2 In order to compile existing baseline information, relevant ecological information within a 1km radius was reviewed, and includes:
- Landscape structure using Ordnance Survey base maps (www.bing.com) and aerial photographs from Google Earth (www.maps.google.co.uk).
 - Designated sites and priority habitat held on <http://magic.defra.gov.uk/>. International statutory designations within 5km and National statutory designations within 2km.
 - Derbyshire Biological Records Centre (DBRC), Leicestershire and Rutland Environmental Records Centre (LRERC) and Staffordshire Ecological Records (SER) search for protected species and designated sites within 1km of the proposals.
- 4.3 It is considered that the search buffers were sufficient to cover the potential zone of influence of the proposed development. The

Field Survey

Otter

- 4.4 The survey methodology aimed to assess the status of otters. It was based on the comprehensive survey guidelines outlined in the *New Rivers and Wildlife Handbook* (RSPB/NRA, 1995). The survey involved a full walkover of the watercourses and immediate surrounding to identify any evidence of the use of the site by otters.
- 4.5 Given the low likelihood of direct observation, the survey focused on identifying field signs indicative of otter presence or activity including:
- **Spraints** – faecal deposits with a distinctive sweet smell. When fresh or relatively recent (within a few weeks), they appear black and oily, but they turn grey and crumbly as they age. They typically contain fish scales, bones, invertebrate exoskeletons and occasionally bird feathers.
 - **Footprints** – In favourable substrates, otter footprints are typically asymmetrical, showing five toes arranged in an arc around a large pad. Depending on the substrate, webbing and claw marks may also be visible. However, in coarser or less suitable substrates, otter footprints can be harder to identify.
- 4.6 Additional signs may suggest otter presence, although these are generally not definitive without further evidence:
- **Feeding remains** – Fish remnants on the riverbanks or rocks/logs within or close to the channel.
 - **Slides/haul-outs** – Paths leading into and out of the water, often showing footprints and claw marks in addition to tail drag marks.
 - **Couches** – Above-ground resting places, usually located in areas with cover like dense scrub, rushes, reeds, flood debris, or fallen trees. Some couches are rarely used, while

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others see more frequent use. These are notoriously difficult to locate or confirm without the use of radiotracking.

- **Holts** – Below-ground resting sites usually associated with sprainting. These may be used more frequently than couches and can be crucial for breeding (natal holts), where other signs may be absent. These are notoriously difficult to locate or confirm without the use of radiotracking.

Water Vole

4.7 Standard survey methodology as detailed in Strachen *et al* (2011)¹ was used which involved searching the banks/margins of the watercourses for evidence of water vole presence including:

- **Latrines** – Distinct piles of water vole droppings typically found near nest sites, along territorial boundaries, and at points where the animals enter and exit the water.
- **Burrows** - The entrances to burrows are usually wider than they are high, with a diameter ranging from 4 to 8 cm, and are generally located at the water's edge.
- **Feeding Stations** - Areas where neat piles of chewed vegetation, cut at a 45-degree angle, are found along pathways or on haul-out platforms at the water's edge.
- **Footprints** - Identifiable tracks found in the soft margins of the watercourse.
- **Runways** - low tunnels that are pushed through the vegetation and often leading to burrows or feeding stations.

Limitations

4.8 It should be noted that whilst every effort has been made to describe the features on site as accurately as possible, this report reflects the habitat conditions and evidence present only at the time the ecology surveys were undertaken. As wild animals are mobile in their nature, presence and absence of a species within suitable habitat can change regularly and over a relatively short time period.

4.9 Due to the density of vegetation and depth of water at some points in the channel, some areas of the banks were not accessible:

- Site 1 – All of watercourse W1 was accessible. Approximately 50% of watercourse W2 was inaccessible due to the density of the vegetation. Sections of the watercourse and banks were assessed at regular intervals with care taken to cause minimum damage to the bank structure and vegetation present.
- Site 2 – Approximately 40% of the watercourse and adjacent banks were inaccessible due to the density of vegetation and depth of the water in the channel.

¹ Strachen, R, Moorhouse, T and Gelling, M (2011) Water Vole Conservation Handbook. Third edition

5.0 Results

Desk Study

Site 1 (Culloden Farm)

Water Vole

- 5.1 LRERC returned two records of water voles along the Ashby Canal, which is located 180m northeast of the site (Field 2) at its closest point, with the most recent record dated 2020.

Otters

- 5.2 LRERC supplied one otter spraint record along the Ashby Canal and within a 1km radius, indicating the potential for use of the watercourse parallel to Fields 2 & 3.

Site 2 (Pessall Brook)

Water Vole

- 5.3 Neither DBRC or SER returned any records of water voles within 1km of the site.

Otters

- 5.4 No records of otter were returned by either DBRC or SER, within 1km of the site.

Field Study

Site 1 (Culloden Farm)

Water Voles

- 5.5 No evidence of water voles was identified along either watercourse within site 1 during the inspection.
- 5.6 Watercourse WC1 was a small stream approximately 1.5m in width and up to 0.6m deep, and had very hard clay banks with high, vertical sides. The southern bank top was a thick hedgerow, predominantly of hawthorn and did not offer suitable riparian vegetation for water vole foraging. The northern bank was characterised by semi-improved grassland, previously grazed by cattle with very limited foraging vegetation and banks too steep for water vole to access the bank top. As such WC1 was considered poor quality habitat to support a water vole population.
- 5.7 Watercourse WC2 was a small stream approximately 1.5m in width and between 0.2 and 0.5m deep. The banks were approximately 45 degrees and 1.5m wide at each side. At the time of survey, the riparian vegetation was extremely dense and obscuring 90% of the watercourse but provided good potential food sources for water voles. The bank tops were both managed grasslands, grazed on the northern side, and mown for hay on the southern side.

Otter

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- 5.8 No evidence of otter presence was recorded within site 1 during the survey. Both WC1 and WC2 were of limited value for the species offering some commuting and foraging potential but unlikely to offer potential for holts due to the bank structures.

Site 2 (Pessall Brook)

Water Vole

- 5.9 No evidence of water voles was identified during the survey, however, prints likely belonging to the species were identified in a single location during the initial PEA.

Otters

- 5.10 Fresh otter prints (Photograph 1) were discovered at three separate locations along the watercourse. A single otter spraint (Photograph 2) was identified on a log within the channel at the northeastern end of the survey area in Field 1 (Figure 2).



Photograph 1– Otter print found on the western bank in Field 2.



Photograph 2 – Otter spraint found on log in the channel on the NE end of the survey area in Field 1.

Incidental Records

Badger

- 5.11 A mammal crossing point was identified on a debris dam within the channel at the northeastern end of F3 (Figure 2). Claw marks indicative of badgers *Meles meles* and badger hairs were found on barbed wire on this crossing point indicating the use of the structure by badgers. No other evidence of the species was identified.

Invasive Species

Crayfish

- 5.12 A single dead signal crayfish *Pacifastacus leniusculus* was identified within the channel towards the southern end of Field 1 (Figure 2). It is likely that population exists within the watercourse, though further survey would be required to ascertain the population size.

6.0 Discussion and Recommendations

Proposals

- 6.1 The River Mease restoration projects aims to improve river channel and riparian habitat, enhance the habitat for the designated features and species along the river, and work to improve water quality.
- 6.2 Works within Site 1 will involve the creation of a wetland within Field 1.
- 6.3 Site 2 will be subject to secondary channel creation, wetland creation, leaky barrier installation and bank reprofiling across all fields. A small bund for the purposes of natural flood management may also be installed in Field 4.

Site 1 – Culloden Farm

Water Vole

- 6.4 As a species listed on Schedule 5 of the Wildlife and Countryside Act 1981 as amended, water voles are protected from deliberate or reckless killing, injury or taking, damage or destruction of its places of shelter, and disturbance whilst occupying those places of shelter.
- 6.5 No evidence of water voles was identified at any point during the survey. The vegetation on the southern watercourse provided suitable foraging and cover for the species but no evidence of their presence was identified. Given the lack of evidence of water voles within the site, it is considered unlikely that the proposed works will have any impact on the species.

Otter

- 6.6 Otters are afforded legal protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) under which it is an offence to intentionally kill, injure or take an otter (or attempt to), possess or control any live or dead specimen or anything derived from an otter, intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter, intentionally or recklessly disturb this species while it is occupying a structure or place which it uses for that purpose. Otters are a European Protected Species, and under the Conservation of Habitats and Species Regulations 2019 (EU Exit) it is an offence to deliberately capture or kill, deliberately disturb or take an otter, or damage or destroy a breeding site or resting place. Otters are also listed as a species of principal importance under the NERC Act and are a BAP Priority Species in Leicestershire.
- 6.7 No evidence of otters was identified at any point during the survey. The watercourses provide some potential for commuting otters. Foraging is unlikely due to the shallow and low-level channel. The bank and vegetation structure and regular management of the adjacent fields make the site of poor quality to support resting places for the species. The proposed works are unlikely to have a significant impact on otters and they are not considered a constraint to the project. Once completed, the new habitats may impact favourably on otters by providing better quality foraging habitat within the area.

Other Species

- 6.8 All other species have been considered and do not present a constraint to the planned works.

General Recommendations

- 6.9 To minimise disturbance, all work should ideally be undertaken by hand where possible, and machinery use limited. This will lessen the impact on any wildlife present.
- 6.10 Where possible, work should be carried out in the winter months to limit disturbance to all wildlife.
- 6.11 Any deep excavations which must be left open overnight must have sloping boards installed to ensure that any animals such as badgers, hedgehogs, hares, or amphibians that fall in are able to escape.
- 6.12 Should any non-protected species such as hedgehog, frog, smooth newt, or toad be found during works they should be moved carefully by hand to an area to be left undisturbed by works.
- 6.13 Should evidence of protected species, such as otter, water vole, nesting birds, great crested newts, badgers, or reptiles, be discovered during works, works should temporarily stop while Pioneer Environment Group Ltd or the local office of Natural England are contacted for advice on the best way to proceed.

Site 2 – Pessall Brook

Water Vole

- 6.14 A small number of potential water vole prints were identified during the PEA walkover, however due to the similarity in prints between other species present in the same habitats (brown rat *Rattus norvegicus*), and the lack of other supporting evidence, it was not possible to conclusively confirm the species. The more detailed water vole survey found no additional evidence of their presence, nor any signs of current or historical habitation within the site. It is therefore concluded that water voles were absent from the site and the proposed works are unlikely to impact upon the species.

Otter

- 6.15 A small number of otter prints and a single spraint were identified within the site during the walkover survey and prints were also present during the PEA walkover survey. A thorough inspection of the watercourse and surrounding area was conducted and there was no evidence to indicate that any features of the riparian habitat were regularly used by otters for rest, shelter or breeding.
- 6.16 As limited evidence of otter presence was identified, any works impacting the watercourse or riparian habitats, begun later than 6 months from the date of this report, should be immediately preceded by an update otter conducted by a suitably qualified ecologist. This survey should determine that the level of otter activity has not altered significantly from that described in this report.
- 6.17 Providing that the level of activity has not altered then the works may be carried out following the general recommendations below (6.21 - 6.25)
- 6.18 In the event that the pre-commencement surveys indicate that the level of activity has altered significantly then this information will be used to inform and agree a more appropriate level of mitigation with the relevant nature conservation consultees.

Other Species

- 6.19 Though evidence of badger commuting was observed along the watercourse, no evidence of habitation or significant use of any habitats within the site was observed. It is considered unlikely that the proposed work will have a significant impact on the local badger population provided that the general recommendations below are adhered to.
- 6.20 All other species have been considered and do not present a constraint to the planned works.

General Recommendations

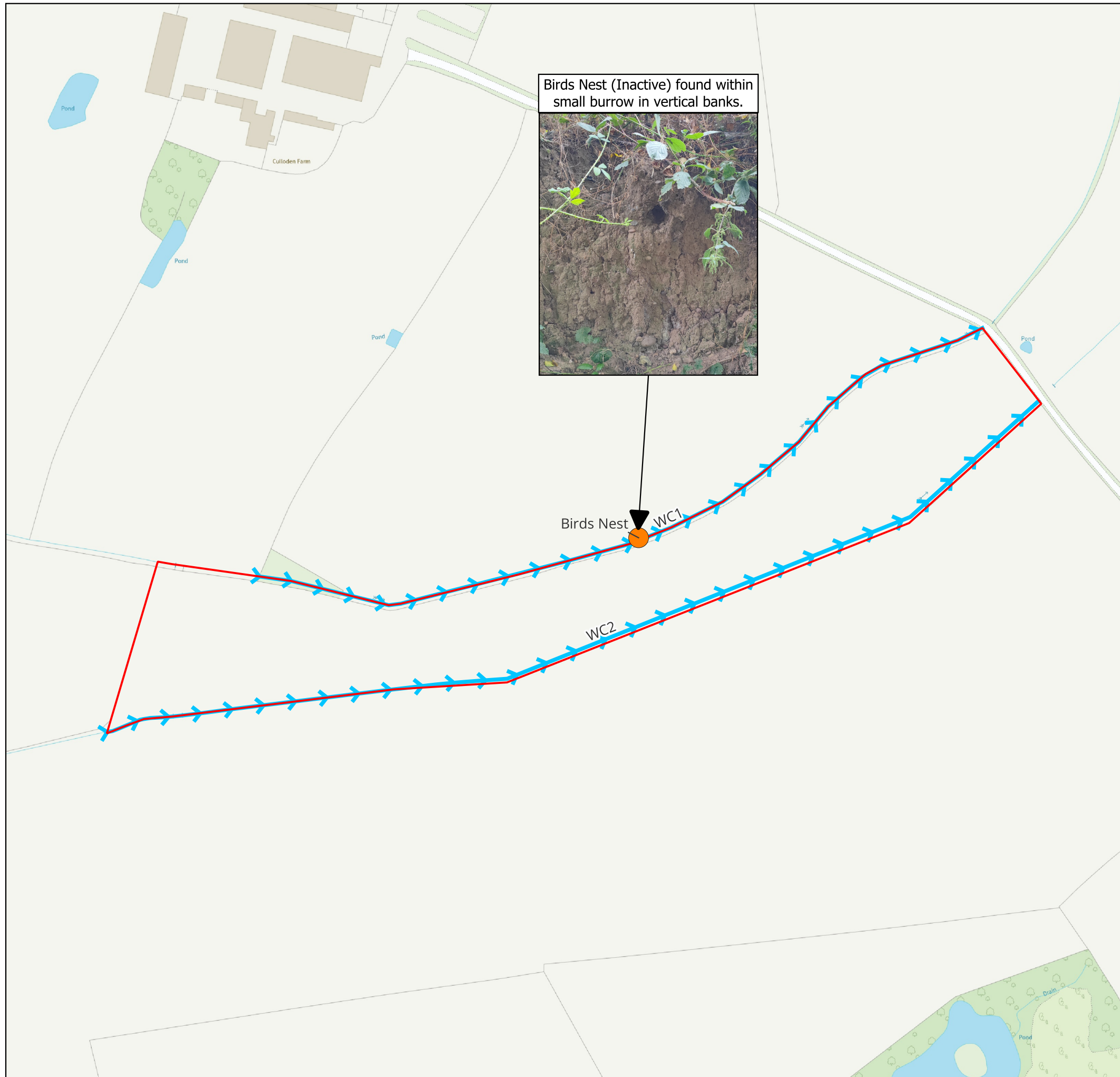
- 6.21 To minimise disturbance, all work should ideally be undertaken by hand where possible, and machinery use limited. This will lessen the impact on any wildlife present.
- 6.22 Where possible, work should be carried out in the winter months to limit disturbance to all wildlife.
- 6.23 Any deep excavations which must be left open overnight must have sloping boards installed to ensure that any animals such as badgers, hedgehogs, hares, or amphibians that fall in are able to escape.
- 6.24 Should any non-protected species such as hedgehog, frog, smooth newt, or toad be found during works they should be moved carefully by hand to an area to be left undisturbed by works.
- 6.25 Should evidence of protected species, such as nesting birds, great crested newts, badgers, or reptiles, be discovered during works, works should temporarily stop while Pioneer Environment Group Ltd or the local office of Natural England are contacted for advice on the best way to proceed.

Enhancements

- 6.26 Opportunities may exist to deliver enhancements for water voles through the creation of additional habitat for the species as part of the proposals for the sites. Where possible the proposals should include retention basins which contain a permanent variable depth of water, with at least one bank having a steep or stepped profile suitable for burrowing. The establishment of suitable native bankside and marginal vegetation in broad strips (minimum of 2 metres wide and a recommendation of 5m) would provide suitable cover and foraging habitat post-development. An appropriate management plan would ensure that the created habitats would remain suitable in the long term. Within site 2, the provision of banks within the newly created wetland areas with less tree cover, more sunlight, and a wider variety of native riparian vegetation would increase the suitability of the site for water voles and increase the potential for future use by the species.
- 6.27 The proposed works providing new wetland areas and restoring the watercourses should provide enhanced foraging and commuting habitat for otters within each site. Maintenance of the wooded areas of bank within site 2 will ensure appropriate habitat is retained for otter resting places and holts and the reduced management (grazing) within site 1 will increase the suitability of the habitat for both otters and water voles.

7.0 Bibliography

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- DEFRA. (2024). Magic Map. Retrieved from Magic Map: <https://magic.defra.gov.uk/MagicMap.aspx>



Birds Nest (Inactive) found within small burrow in vertical banks.



Birds Nest

WC1

WC2

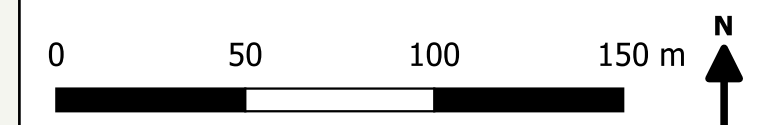
Key

Site Boundary

Watercourse

Incidental Records

Birds Nest



Project Name: **Upper Mease Catchment
Site 1 - Culloden Farm**

Client: **Trent Rivers Trust**

Figure No: **Figure 1**

Date:
20.09.2024

Title: Site 1 Layout &
Protected/Invasive Species

