

A46 Newark Bypass

TR010065/APP/6.3

6.3 Environmental Statement

Appendix 8.12 Water Vole Technical Report

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009

Volume 6

April 2024

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009**

A46 Newark Bypass

Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT

APPENDIX 8.12 WATER VOLE TECHNICAL REPORT

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010065
Application Document Reference	TR010065/APP/6.3
Author:	A46 Newark Bypass Project Team, National Highways

Version	Date	Status of Version
Rev 1	April 2024	DCO Application

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1 Introduction

1.1 Background and scope of works

- 1.1.1 As part of the A46 Newark Bypass Scheme (the Scheme), water vole *Arvicola amphibius* surveys were undertaken to inform the biodiversity assessment reported in Chapter 8 (Biodiversity) of the Environmental Statement (ES) **(TR010065/APP/6.1)**.
- 1.1.2 Chapter 2 (The Scheme) of the ES **(TR010065/APP/6.1)** provides the background and a description of the Scheme. The information described in this report provides the results of the water vole habitat suitability assessments and presence/likely absence surveys, which will be used to inform the Environmental Impact Assessment (EIA) for the Scheme.
- 1.1.3 This report details the surveys for water vole undertaken between May to November 2022 and April to August 2023. Suitable habitats for water vole were identified through a combination of a desk-based assessment of aerial imagery, the results of the extended Phase 1 habitat surveys undertaken for the Scheme in 2022 and 2023 (see Appendix 8.1 (Extended Phase 1 Habitat Technical Report) of the ES appendices **(TR010065/APP/6.3)**) and the results of further waterbody assessments conducted in 2022 and 2023. All suitable habitats, except those for which land access permission was not available or where a safe access route could not be found, were surveyed for water vole with reference to the methods given in Section 3 of this report.
- 1.1.4 This report includes:
- Relevant legislation
 - Methods for desk and field-based assessments
 - Competencies of the ecologists involved in undertaking the above surveys
 - Limitations to the surveys undertaken and any assumptions made as a result of incomplete data
 - Survey results
 - A summary of the field survey results

2 Legislation, policy and licences

2.1 Legislation

- 2.1.1 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)¹. The legislation makes it an offence to:
- Intentionally kill, injure, disturb, or take a wild water vole.
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by this species.
 - Sell, offer for sale, or advertise live or dead water vole.
 - Possess or control a live or dead water vole, or any part of a water vole.
- 2.1.2 A mitigation licence for water vole from Natural England is required if the works will intentionally damage or destroy burrows or displace water vole from their burrows for development projects.

2.2 Policy framework

- 2.2.1 National policies relevant to biodiversity are not provided here. These are evaluated in Chapter 8 (Biodiversity) of the ES (TR010065/APP/6.1).
- 2.2.2 As a protected species, the presence of water vole is a consideration in the planning process through the application of relevant planning policy.
- 2.2.3 Water vole in Nottinghamshire have a specific Species Action Plan (SAP), which are derived from the UK Biodiversity Steering Group Report.² The main aims and proposed actions for the water vole SAP (Nottinghamshire Local Biodiversity Action Plan, 1998³) are as follows:
- Following further research to identify the ecological requirements of this species, seek to ensure that these are considered when setting water quality objectives for standing and running waters occupied by water vole.

¹ His Majesty's Stationery Office (HMSO), The Wildlife & Countryside Act, 1981. <https://www.legislation.gov.uk/ukpga/1985/59/contents>. (Last accessed December 2023).

² Joint Nature Conservation Committee (JNCC), Biodiversity: The UK Steering Group Report (1995-1999) <https://hub.jncc.gov.uk/assets/9c2e576a-31b7-4bae-a620-972d99177a1f>. (Last accessed December 2023).

³ Nottinghamshire Biodiversity Action Group (1998) Species Action Plan for Water Vole. Available at: [\[REDACTED\]](#). (Last accessed December 2023).

- Promote management of riparian habitats to favour the water vole.
- Ensure that the Ministry of Agriculture, Fisheries and Food (MAFF) 'Code of Good Agricultural Practice for Protection of Water'⁴ is published widely. MAFF to pursue poisonings under the Food and Environmental Protection Act 1985⁵ and associated regulations.
- Seek to include the needs of water vole in the management of Sites of Special Scientific Interest (SSSI) and other wildlife sites.
- Ensure that the protection and enhancement of water vole populations is highlighted and promoted in all Local Environment Agency Plans (LEAPs) by 2005.
- Explore the possibilities for creating areas of suitable habitat under the Countryside Stewardship Scheme.
- Avoid damage to actual or potential water vole habitat caused by culverting, channelisation, sheet piling and flood defence work wherever possible and explore opportunities for restoring watercourses to a more natural structure.
- Promote the benefits of watercourse buffer strips to landowners and managers, including their value as water vole habitat.
- Following further investigation on the effects of mink predation, and if deemed to be appropriate, encourage control of mink where this will increase water vole abundance or range.
- Ensure the provision of advice to relevant organisations and riparian owners on the conservation problems of the species.
- Continue to survey to determine the distribution of water vole in Nottinghamshire, identifying key populations and explore the need for localised reintroductions.
- Pass information gathered during the survey and monitoring of the species to Joint Nature Conservation Committee (JNCC), Biological Records Centre (BRC) and Royal Society of Nature Conservation (RSNC) so that it can be incorporated into a national database.
- Raise awareness and improve understanding of the water vole as an indicator species of the quality of riparian habitats.

⁴ MAFF, Protecting our Water, Soil and Air – A code of good agricultural practice for farmers, growers and land managers, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/268691/pb13558-cogap-131223.pdf. (Last accessed December 2023).

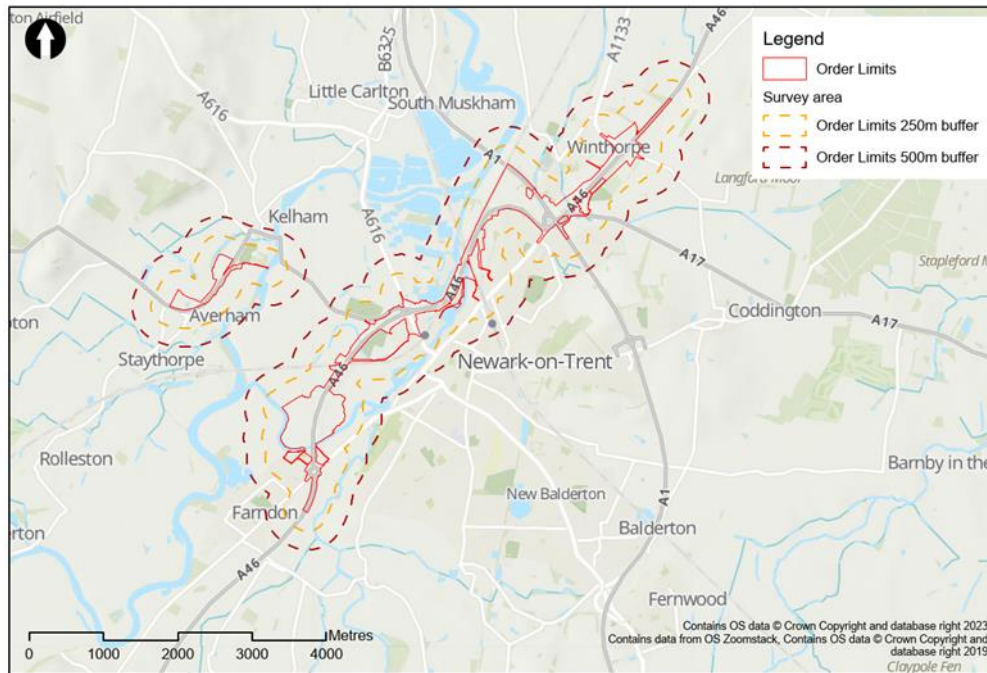
⁵ HMSO, The Food and Environmental Protection Act, 1985. <https://www.legislation.gov.uk/ukpga/1985/48>. (Last accessed December 2023).

3 Methodology

3.1 Survey area

- 3.1.1 All surveys for water vole were conducted within a 250 metre buffer of the Order Limits. The Order Limits are split between the 'main alignment' and 'Kelham and Averham Floodplain Compensation Area (FCA)'. This area is hereafter referred to as the 'survey area', which can be seen in Figure 3-1 below.
- 3.1.2 The main alignment refers to the part of the site that follows the current A46 layout which is where the new road layout and dualling of the A46 will occur. The Kelham and Averham FCA is located to the north-west of the main alignment and is where some of the floodplain compensation works for the Scheme will be located.
- 3.1.3 Due to the fact that the Kelham and Averham FCA was added to the Order Limits at a later date, additional habitat assessment and field surveys within the Kelham and Averham FCA were undertaken in a different survey season than the main alignment.
- 3.1.4 There have been numerous design iterations resulting in changes to the Order Limits and therefore the survey area. Features recorded during surveys that are now located outside of the current survey area, are no longer within the zone of influence. These features have been omitted from this technical report and associated drawings. Original feature references have been retained, so do not appear sequentially in the results tables within this report.

Figure 3-1: Survey area of the main alignment and Kelham and Averham FCA



Source: Mott MacDonald, 2023

3.2 Desk study

- 3.2.1 A desk study was undertaken in 2022 to identify any records of water vole within the Order Limits or within 2 kilometres of the Order Limits.
- 3.2.2 Nottinghamshire Biological and Geological Record Centre (NBGRC) was contacted in June 2022 to request a copy of all protected species data within the search area.
- 3.2.3 It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

3.3 Water vole habitat suitability assessment

- 3.3.1 All waterbodies, including linear waterbodies/watercourses, ditches and ponds, within the survey area were assessed for their suitability to support water vole.
- 3.3.2 Using a combination of the extended Phase 1 habitat survey results and desk based assessment of aerial imagery and Ordnance Survey (OS) maps, waterbodies/watercourses and ditches were identified within the survey area. All linear

waterbodies were scoped in for further assessments and surveyed for their suitability to support water vole.

3.3.3 Using a combination of the results from the extended Phase 1 habitat surveys and further waterbody assessments conducted in 2022, no ponds within the survey area were found to have suitability for water vole and were scoped out from further surveys. This was owing to a combination of the waterbodies being situated too far away from suitable riverine habitat and the waterbodies having unsuitable banks for water vole burrowing and/or foraging.

3.3.4 In addition to the above, no known records of fossorial⁶ water vole populations were recorded within the survey area. Therefore, grasslands and other in-land habitats that may be suitable for fossorial water vole were scoped out and were not surveyed.

3.3.5 Water vole habitat assessment surveys were conducted between May and September 2022, in November 2022 and between April and May 2023, on all waterbodies within 250 metres of the Order Limits. For full details of survey dates and weather conditions for each transect see Appendix A (Overview of water vole surveys) of this report and for locations of the water vole habitats surveyed see Appendix C (Water vole habitat suitability) of this report.

3.3.6 These surveys involved the assessment of riverine habitat in the field for suitability for water vole. The following features were recorded as recommended by Strachan *et al.* (2011)⁷:

- Site details
- Habitat of watercourse
- Bank substrate
- Bank profile
- Depth of water
- Bordering land-use
- Vegetation cover (using the DAFOR⁸ scale)
- Water vole food supply
- Disturbance
- Connectivity to other habitats

⁶ Several populations of water vole have been known to adapt to a fossorial (burrowing) lifestyle, and spend the vast majority of their lives underground in burrows within grassland areas, rather than a lifestyle within riverine habitat. One notable population of fossorial water vole within the UK can be found in Glasgow, Scotland (McInery, C.J. (2021). Expansion in recorded range of fossorial water vole in Glasgow, Scotland. School of Life Sciences, University of Glasgow).

⁷ Strachan, R. & Moorhouse, T., and Gelling, M. (2011). Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit. University of Oxford.

⁸ DAFOR scale for recording botanical plant abundance: D = Dominant (more than 75% of the surface area cover of a particular botanical species), A = Abundant (50-75%), F = Frequent (25-50%), O = Occasional (10-25%) and R = Rare (less than 10% of the botanical species are this species).

- Width of watercourse
- Current/flow of water
- Wildlife information (including the signs of otter/mink/brown rat presence)

3.3.7 After the collection of this data, the riverine habitat was rated as either 'Suitable' or 'Unsuitable' for water vole, following guidance from Dean *et al.* (2016).⁹ Examples of water vole riverine habitat preferences include, but are not exclusively limited to the following:

- Preference towards riverine habitat with banks comprised of a substrate which water vole can burrow into; opposed to banks reinforced by concrete or sheet piling.
- Preference towards steeper bank profiles and whilst shallow bank profiles can be used, heavy grazing or poaching of these shallower banks (by cattle or livestock) is particularly unfavourable.
- Ditches that were dry at the time of survey and considered to be too shallow at the highest seasonal water levels at other times of the year (indicated by water marks and bankside vegetation) are considered to be less suitable than those maintaining a water level and subject only to gradual water level fluctuations.
- Banks with high levels of scrub cover, resulting heavy shading of the banks, or those that are bare of vegetation are considered less suitable than vegetated banks with reduced levels of shading.

3.3.8 Riverine habitats that were assessed as being suitable for water vole were subject to further surveys via the use of presence/likely absence surveys.

3.4 Water vole presence/likely absence surveys

Weather conditions

3.4.1 Water vole presence/likely absence surveys were timed to avoid periods of high rainfall and/or high-water levels, where possible; so that field signs would more likely be retained within the survey area, should they be present (Dean *et al.*, 2016).

3.4.2 Surveys undertaken in May 2022 had overcast, mild days with average temperatures of 14°C. Weather conditions in June 2022 varied with highest temperatures reaching 30°C. During the July 2022 survey, temperatures peaked at 19°C and weather conditions included overcast clouds with some

⁹ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook. The Mammal Society, London.

light rainfall. Weather conditions in September 2022 varied from 17°C and overcast to 21°C and clear skies.

- 3.4.3 Surveys undertaken in April and May 2023 had clear, mild days with average temperatures of 14°C. Surveys undertaken in June 2023 had clear warm days with an average temperature of 18°C. Surveys undertaken in August 2023 were overcast and mild, with average temperatures of 17°C.

Timings

- 3.4.4 Following the habitat suitability assessments and with reference to the mitigation guidelines given by Dean *et al.* (2016), two survey visits were recommended to assess the presence/likely absence of water vole within pre-identified suitable habitat. These visits were undertaken at least two months apart with one visit in the first half of the water vole survey season (mid-April to end of June) and the other in the second half of the survey season (July to September).
- 3.4.5 Owing to access and programming constraints, 56 of the 140 subsections within 250 metres of the main alignment of the Scheme were subject to habitat assessments within the second half of the 2022 survey season (July to September). Twenty-two of the 58 subsections were considered suitable for water vole; with 10 of these 22 subsections receiving their first presence / likely absence survey within the same period (July to September 2022). The second presence / likely absence survey for these 10 subsections was undertaken between April and June 2023. The remaining 12 of the 22 suitable subsections were subject to presence / likely absence surveys in 2023.
- 3.4.6 Of the 20 subsections that were identified within the Kelham and Averham FCA, 11 of these 20 subsections were surveyed between April and May 2023. The second survey for these subsections was undertaken between July and August 2023 (where access was permitted by the landowner and/or safe access to the channel can be gained). The remaining nine subsections within Kelham and Averham FCA have not been surveyed, due to refused land access. Five subsections within 250 metres of the main alignment were also not surveyed due to refused access or removal of bankside habitat considered to impact upon feasibility of any field survey along these subsections.

Field signs

3.4.7 Field signs, if any, were identified, categorised, and used as evidence for the presence of water vole according to Strachan *et al.* (2011). These include:

- Droppings
- Latrines
- Feeding stations
- Burrows
- Lawns
- Above ground nests
- Runs in vegetation
- Footprints

Survey approach

3.4.8 As per the guidelines given by Strachan *et al.* (2011), surveys were as a minimum conducted from one bank of the suitable linear waterbody, with surveyors assessing the opposite bank if the habitat on one bank was unsuitable for water vole. Whilst surveying for field signs, surveyors made every effort to get as close to the waters edge as possible and surveyed from the toe of the bank, up to 5 meters back from the edge of the water.

3.4.9 Where possible and safe to do so, linear waterbodies were also assessed from within the channel itself. Where access within the channel was not possible or considered unsafe, surveys of the bankside were considered to provide sufficient survey coverage and the use of artificial latrine rafts was largely considered unnecessary (with the exception of one watercourse within British Sugar Factory Land – see 3.6.5).

3.4.10 Some access restrictions were encountered for several waterbodies – see Section 3.6 ‘Limitations’.

3.5 Competence of surveyors

3.5.1 All field surveys were led by competent ecologists, familiar with water vole ecology and surveying techniques. As members of the Chartered Institute of Ecology and Environmental Management (CIEEM), the ecologists are qualified practitioners who abide by CIEEM’s Code of Professional Conduct.

3.6 Limitations

Deviations from the standard methodology

- 3.6.1 Owing to programming and access constraints, the two required visits for water vole presence/likely absence surveys could not be completed within a single survey season for six of the linear waterbodies along the main alignment. Surveys were completed in both 2022 and 2023.

Limitations

- 3.6.2 The desk study reviewed all the records returned by NBGRC however those records from within the last 10 years were considered more relevant than more historic records and therefore any records older than this are not discussed within the results section.
- 3.6.3 Several habitat assessment surveys were conducted within November 2022, where vegetation cover is typically lower. Although this is not necessarily within the standard guidance for habitat assessments, a precautionary approach was taken and it was assumed that these waterbodies were suitable for water vole.
- 3.6.4 Access to the survey area was limited to the National Highways soft-estate and third-party land where access had been agreed with the landowner. Access was refused to three subsections of one waterbody (WV02_S01, WV02_S02 and WV02_S06), nine sections of another waterbody (WV35_S01 – WV35_S09) and two subsections of another waterbody (WV36_S07, WV36_S08) that had been scoped in for water vole surveys (see Appendix A (Overview of water vole surveys) for details of these habitats and Appendix D (Water vole survey results) of this report for the locations of these waterbodies). Access to these waterbodies remained refused during the final survey visits during July and August 2023.
- 3.6.5 Twenty subsections split over eight of the linear waterbodies (WV05, WV06, WV07, WV08, WV09, WV10, WV24 and WV36) that were surveyed during the habitat assessment stage were found to be inaccessible for subsequent full field sign search surveys. This was due to steep and/or heavily vegetated banks or being in areas that were fenced/closed off, such as three of the linear waterbodies within the grounds of the British Sugar Factory (WV07, WV08 and WV09). The use of artificial latrine rafts was considered along the one linear waterbody (WV09) within British Sugar

Factory land where access along the banks was greatly restricted and the channel was inaccessible (deep silt and not accessible by boat). The clearance of dense scrub would have been required in approximately 40 locations to deploy rafts every 10 metres. The method was not pursued to avoid encouraging the risk of third-parties (members of the public) trespassing on the British Sugar Land, as the cleared areas of vegetation would likely have provided open access to the factory's land. However, the habitat along this watercourse was rendered unsuitable for water vole following vegetation clearance of the channel and western bank (beyond 5 metres from the water's edge) by an un-related organisation. Therefore, no further survey effort was required along this water vole transect, at the point of the assessment.

- 3.6.6 In addition to the limitations mentioned above, the inaccessible nature of some watercourses meant it was not always possible to survey from within the watercourses. This limitation is not considered to be significant to the results of the survey as watercourses were surveyed from the banks and surveying from within the waterbody is not a survey method that is required within the water vole survey guidelines.
- 3.6.7 Since engineers visited the land in 2022, no further access to WV35 (S01 – S09) has been granted to undertake an initial assessment of habitat suitability for water vole. Suitability of this ditch is considered to be poor based on photographs provided by the engineers, as it appears to be dry and dominated by bramble. However, this transect, comprising a depression along the base of a ha-ha, is subject to seasonal flooding and the condition of the wall along the northern bank is unknown and so could provide opportunities for water vole to burrow between the stonework. These photographs are not a substitute for undertaking surveys and access for surveys will be sought pre-construction.

4 Results

4.1 Desk study

- 4.1.1 No statutory or non-statutory designated sites designated for water vole were recorded within 2 kilometers of the Scheme.
- 4.1.2 A total of 61 records of water vole were returned by NBGRC from years 1998-2015, with a distance from the Scheme up to 2.8 kilometres. These were then filtered to only show records from the last 10 years (2012-2022) and with a maximum distance from the Scheme of up to 2 kilometres. This gave a total of 18 water vole records, summarised in Table 4-1 below.

Table 4-1: Summary of records returned from NBGRC

Grid reference	Year	Distance from the Order Limits (km)
SK77905166	2014	0.0
SK78945151	2013	1.0
SK78875152	2015	0.9
SK78925152	2015	0.9
SK78985151	2015	1.0
SK79305140	2014	1.3
SK79375142	2013	1.4
SK79635122	2014	1.7
SK79665119	2013	1.7
SK79825113	2013	1.9
SK79955108	2013	2.0
SK79015150	2015	1.0
SK79045150	2015	1.1
SK79075149	2015	1.1
SK79125148	2015	1.1
SK80635141	2014	2.6
SK80085102	2013	2.2
SK80655152	2013	2.6

Source: NBGRC, 2022

4.2 Water vole habitat assessments

- 4.2.1 The water vole habitat assessment surveys, conducted between May to September 2022 and April to May 2023, identified a total of 58 subsections of water vole transects as being suitable for use by water vole. Full details of these habitat assessment surveys can be seen in Appendix B (Water vole habitat assessment results) and are shown in Appendix F (Water vole habitat assessment photos) of this report.
- 4.2.2 Ninety subsections of water vole transects failed to satisfy the water vole habitat assessment criteria and upon inspection were deemed unsuitable for use by water vole. The locations of all the linear waterbodies can be found on the water vole habitat suitability map within Appendix C (Water vole habitat suitability) of this report along with details of the waterbodies not yet surveyed.
- 4.2.3 A considerable proportion of all linear waterbodies identified as being suitable for water vole are located towards the southern end of the Scheme, with only five suitable linear waterbodies being located north of the B6166, A46, A1 and A17 crossroads.
- 4.2.4 Seven of the suitable linear waterbodies are situated between the River Trent tributaries to the west of Newark-on-Trent and the east of Kelham. A further, smaller number of suitable linear waterbodies are located to the east of Farndon, immediately adjacent to the existing A46, with two of these linear waterbodies passing under the A46.

4.3 Water vole presence/likely absence surveys

- 4.3.1 The presence of water vole was confirmed on one waterbody within the survey area, the Old Trent Dyke (WV14). On this waterbody three droppings were recorded in a single location in September 2022 at subsection WV14_S14 (photo ID 182, Appendix G (Water vole field signs photos) of this report). To date this has been the only record of definitive evidence of water vole recorded from the surveys. However, it should be noted that 19 records of small mammal feeding stations were also recorded on the Old Trent Dyke, one of which was recorded during the same survey visit in September 2022.
- 4.3.2 A total of 4141 records of small mammal field sign evidence was identified during the presence/likely absence surveys in 2022, which included feeding stations, droppings, footprint and burrows. Some of the feeding remains and footprints

identified during the surveys resembled those of water vole. However, in the absence of latrines and droppings indicative of water vole, field signs of small mammals recorded in isolation cannot be identified as evidence of water vole presence.

- 4.3.3 A total of 307 records of small mammal field signs were observed during the ongoing 2023 surveys; however, no definitive water vole evidence has been observed in 2023.
- 4.3.4 During the water vole presence/likely absence surveys evidence of small mammals using the surveyed habitats was identified. These signs included 126 small mammal feeding stations, 40 records of latrines that were associated with field vole *Microtus agrestis*, seven records of droppings, five records of small mammal footprints, four records of small mammal runs and 158 records of small mammal burrows. The results are summarised in Appendix D (Water vole survey results) of this report.
- 4.3.5 Field signs such as feeding stations were recorded could have been associated with water vole. However, without the lack of other distinct water vole field signs (droppings, burrows and latrines) this evidence cannot be definitive associated with water vole.
- 4.3.6 The location of the features identified are detailed within Appendix D (Water vole survey results), within Appendix E (Summary of water vole field signs) and within Appendix F (Water vole habitat assessment photos) of this report.
- 4.3.7 Small mammal field signs were identified at Old Trent Dyke (water vole transect WV14), which included: 19 small mammal feeding stations, five areas of small mammal droppings and two small mammal latrines. A total of 58 of the field sign records were inside of the Order Limits, whilst the remaining records were located within 250 metres of the Order Limits.
- 4.3.8 Small mammal signs were also identified immediately south of the A17 (water vole transect WV02) at the junction with the A46. The signs identified here included six small mammal feeding sign, six small mammal latrines and three small mammal run.
- 4.3.9 Small mammal signs were identified to the south of the Order Limits south of Farndon on several agricultural ditches (WV32, WV33 and WV34). Field signs identified included 81 records of small mammal feeding remains, 21 records of small mammal latrines and two records of small mammal footprints.

- 4.3.10 In addition to the above, small mammal field signs were also recorded on areas of the Kelham and Averham FCA where access was granted. Small mammals field signs were also recorded on an agricultural drainage ditch (WV36) west of the A617 and included 16 record of small mammal feeding remains, 14 records of small mammal latrines and one sighting of an unconfirmed small mammal jumping into the channel of the ditch as the surveyors approached.
- 4.3.11 A full summary of the water vole presence/likely absence surveys can be found in Appendix D (Water vole survey results), Appendix E (Summary of water vole field signs) and in Appendix G (Water vole field signs photos) of this report.

5 Summary

- 5.1.1 In total, 58 subsections of the linear water vole transects were identified as being suitable for water vole. These suitable subsections were split over 11 of the water vole transects (WV02, WV05, WV06, WV07, WV09, WV10, WV14, WV32 WV33, WV34 and WV36).
- 5.1.2 Ninety subsections of water vole transects were deemed unsuitable for water vole across the survey area.
- 5.1.3 Many of the water vole transects identified as being suitable to support water vole are located adjacent to Old Trent Dyke, towards the mid to southern end of the Scheme.
- 5.1.4 The presence of water vole was confirmed on one waterbody within the survey area, the Old Trent Dyke (WV14). On this waterbody three droppings were recorded in a single location in September 2022 at subsection WV14_S14 (photo ID 182, Appendix G of this report). To date this has been the only record of definitive evidence of water vole recorded from the surveys. However, it should be noted that 19 records of feeding stations were also recorded on the Old Trent Dyke, one of which was recorded during the same survey visit in September 2022.
- 5.1.5 Evidence of small mammal presence was identified on nine waterbodies (WV02, WV05, WV06, WV09, WV14, WV32, WV33, WV34 and WV36). A total of 348 records of field sign evidence of small mammals was identified during the presence/likely absence survey. Evidence of feeding remains and footprints identified during the surveys resembled those of water vole. However, in the absence of latrines and droppings indicative of water vole, field signs of small mammals recorded in isolation could not be identified as evidence of water vole presence.
- 5.1.6 Surveys undertaken in February and May 2023 on WV02, WV05, WV06, WV14, WV32, WV33, WV34 and WV36 identified a 299 records of small mammal evidence including latrines, feeding stations and small burrows. However, none of these field signs were determined to be from water vole.
- Surveys undertaken in August 2023 on WV05, WV06, WV14 and WV36 identified 25 records of small mammal field signs, including two feeding remains, one record of small mammal droppings, small mammal burrow and one sighting of an unconfirmed mammal jumping into the channel as the surveyors approached.

6 References

- ¹ His Majesty's Stationery Office (HMSO), The Wildlife & Countryside Act, 1981. <https://www.legislation.gov.uk/ukpga/1985/59/contents> (Last accessed December 2023).
- ² Joint Nature Conservation Committee (JNCC), Biodiversity: The UK Steering Group Report (1995-1999) <https://hub.jncc.gov.uk/assets/9c2e576a-31b7-4bae-a620-972d99177a1f> (Last accessed December 2023).
- ³ Nottinghamshire Biodiversity Action Group (1998) Species Action Plan for Water Vole. Available at: [REDACTED] (Last accessed December 2023).
- ⁴ MAFF, Protecting our Water, Soil and Air – A code of good agricultural practice for farmers, growers and land managers, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/268691/pb13558-cogap-131223.pdf (Last accessed December 2023).
- ⁵ HMSO, The Food and Environmental Protection Act, 1985. <https://www.legislation.gov.uk/ukpga/1985/48> (Last accessed December 2023).
- ⁶ Several populations of water vole have been known to adapt to a fossorial (burrowing) lifestyle, and spend the vast majority of their lives underground in burrows within grassland areas, rather than a lifestyle within riverine habitat. One notable population of fossorial water vole within the UK can be found in Glasgow, Scotland (McInery, C.J. (2021). Expansion in recorded range of fossorial water vole in Glasgow, Scotland. School of Life Sciences, University of Glasgow).
- ⁷ Strachan, R. & Moorhouse, T., and Gelling, M. (2011). Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit. University of Oxford.
- ⁸ DAFOR scale for recording botanical plant abundance: D = Dominant (more than 75% of the surface area cover of a particular botanical species), A = Abundant (50-75%), F = Frequent (25-50%), O = Occasional (10-25%) and R = Rare (less than 10% of the botanical species are this species).
- ⁹ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook. The Mammal Society, London.

A. Appendix: Overview of water vole surveys

Appendix Table A-1: Water vole habitat assessment, field sign survey dates and habitat assessment weather conditions

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
WV01	S01	24/05/2022	N/A – Unsuitable waterbody for water vole (Dry)	N/A – Unsuitable waterbody for water vole (Dry)	14	0	6	1
	S02	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S03	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S04	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
WV02	S01	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S02	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S03	24/05/2022	N/A – Unsuitable waterbody for water vole	N/A – Unsuitable waterbody for water vole	14	0	6	1
	S04	24/05/2022	N/A – Unsuitable	N/A – Unsuitable	14	0	6	1
	S05	24/05/2022	N/A – Unsuitable	N/A – Unsuitable	14	0	6	1
	S06	Access refused	N/A	N/A	N/A	N/A	N/A	N/A

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S07	14/07/2022	14/07/2022	09/05/2023	19	2	8	1
	S08	14/07/2022	14/07/2022	09/05/2023	19	1	8	1
	S09	14/07/2022	14/07/2022	09/05/2023	19	1	8	1
	S10	14/07/2022	N/A – Dry	N/A – Dry	19	1	8	1
	S11	14/07/2022	14/07/2022	09/05/2023	19	1	8	1
	S12	14/07/2022	14/07/2022	09/05/2023	19	1	8	1
	S13	14/07/2022	14/07/2022	09/05/2023	19	1	8	1
WV03	S01	17/06/2022	N/A – Dry	N/A – Dry	30	0	0	1
	S02	17/06/2022	N/A – Dry	N/A – Dry	30	0	0	1
	S03	17/06/2022	N/A – Dry	N/A – Dry	30	0	0	1
WV04	S01	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S02	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
WV05	S01	06/09/2022	06/09/2022	10/05/2023	17	0	6	2
	S02	06/09/2022	N/A – Unsuitable	N/A – Unsuitable	17	0	6	2

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)	
	S03	06/09/2022	N/A – Unsuitable	N/A – Unsuitable	17	0	6	2	
	S04	17/06/2022	02/05/2023	04/08/2023	23	0	4	5	
	S05	17/06/2022	No safe access	No safe access	23	0	4	5	
	S06	06/09/2022	06/09/2022	02/05/2023	17	0	6	2	
	S07	06/09/2022	06/09/2022	04/05/2023	17	0	6	2	
	S08	06/09/2022	06/09/2022	04/05/2023	17	0	6	2	
	S09	24/05/2022	No safe access	No safe access	14	0	6	1	
	S10	24/05/2022	No safe access	No safe access	14	0	6	1	
	S11	26/05/2022	N/A – Unsuitable	N/A – Unsuitable	14	2	8	0	
	WV06	S01	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
		S02	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
S03		24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1	
S04		24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1	
S05		24/05/2022	05/05/2023	02/08/2023	14	0	6	1	

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S06	24/05/2022	N/A – Unsuitable	N/A – Unsuitable	14	0	6	1
	S07	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S08	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S09	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
	S10	24/05/2022	N/A – Dry	N/A – Dry	14	0	6	1
WV07	S01	25/05/2022	25/05/2022	08/09/2022	13	0	8	3
	S02	25/05/2022	No safe access	No safe access	13	0	8	3
	S03	25/05/2022	No safe access	No safe access	13	0	8	3
	S04	25/05/2022	No safe access	No safe access	13	0	8	3
WV08	S01	25/05/2022	N/A – Dry	N/A – Dry	13	0	8	3
	S02	25/05/2022	N/A – Dry	N/A – Dry	13	0	8	3
	S03	25/05/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	8	3
	S04	25/05/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	8	3
	S05	25/05/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	8	3
	S06	25/05/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	8	3

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S07	25/05/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	8	3
WV09	S01	25/05/2022	No safe access	No safe access	13	0	8	3
	S02	25/05/2022	25/05/2022	08/09/2022	13	0	8	3
	S03	Habitat removed before the habitat assessment could be conducted.	N/A	N/A	N/A	N/A	N/A	N/A
	S04	Habitat removed before the habitat assessment could be conducted.	N/A	N/A	N/A	N/A	N/A	N/A
	S05	25/05/2022	No safe access	No safe access	13	0	8	3
	S06	25/05/2022	No safe access	No safe access	13	0	8	3
	S07	25/05/2022	N/A – Dry	N/A – Dry	13	0	8	3
	S08	25/05/2022	N/A – Dry	N/A – Dry	13	0	8	3
WV10	S01	25/05/2022	25/05/2022	08/09/2022	13	0	8	3

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S02	25/05/2022	25/05/2022	08/09/2022	13	0	8	3
	S03	25/05/2022	No safe access	No safe access	13	0	8	3
WV11	S01	17/06/2022	N/A – Dry	N/A – Dry	30	0	0	1
WV12	S01	17/06/2022	N/A – Unsuitable	N/A – Unsuitable	30	0	0	1
	S02	17/06/2022	N/A – Unsuitable	N/A – Unsuitable	30	0	0	1
WV13	S01	17/06/2022	N/A – Unsuitable	N/A – Unsuitable	30	0	0	1
WV14	S01	10/11/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	7	6
	S02	10/11/2022	N/A – Unsuitable	N/A – Unsuitable	13	0	7	6
	S03	10/11/2022	05/05/2023	03/08/2023	13	0	7	6
	S04	10/11/2022	05/05/2023	03/08/2023	13	0	7	6
	S05	10/11/2022	05/05/2023	02/08/2023	13	0	7	6
	S06	10/11/2022	05/05/2023	02/08/2023	13	0	7	6
	S07	25/05/2022	25/05/2022	07/09/2022	13	0	8	3
	S08	25/05/2022	25/05/2022	07/09/2022	13	0	8	3

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S09	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S10	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S13	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S14	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S15	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S16	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S17	26/05/2022	26/05/2022	07/09/2022	14	0	8	2
	S18	06/09/2022	30/05/2023	17/08/2023	17	0	6	2
	S19	06/09/2022	30/05/2023	17/08/2023	17	0	6	2
	S20	06/09/2022	30/05/2023	17/08/2023	17	0	6	2
	S21	06/09/2022	30/05/2023	21/08/2023	17	0	6	2
	S22	06/09/2022	02/06/2023	21/08/2023	17	0	6	2
	S23	06/09/2022	02/06/2023	21/08/2023	17	0	6	2
	S24	06/09/2022	02/06/2023	21/08/2023	17	0	6	2

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S25	06/09/2022	02/06/2023	21/08/2023	17	0	6	2
	S26	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S27	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S28	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S29	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S30	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S31	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S32	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
	S33	06/09/2022	22/06/2023*	N/A – Unsuitable*	17	0	6	2
WV16	S01	26/05/2022	N/A – Dry	N/A – Dry	14	0	8	2
	S02	26/05/2022	N/A – Dry	N/A – Dry	14	0	8	2
WV18	S01	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	4	1
	S02	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	4	1
	S03	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	2	1

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S04	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	2	1
WV19	S01	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	4	1
	S02	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	4	1
WV20	S01	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	4	1
	S02	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	1	1
	S03	09/11/2022	N/A – Unsuitable	N/A – Unsuitable	12	0	1	1
WV21	S01	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S02	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S03	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S04	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S05	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S06	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S07	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
	S08	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S09	07/09/2022	N/A – Dry	N/A – Dry	21	0	0	1
WV22	S01	06/09/2022	N/A – Dry	N/A – Dry	17	0	6	2
	S02	06/09/2022	N/A – Dry	N/A – Dry	17	0	6	2
WV23	S01	06/09/2022	N/A – Dry	N/A – Dry	17	0	6	2
WV24	S01	15/06/2022	N/A – Dry	N/A – Dry	21	0	1	1
	S02	15/06/2022	N/A – Dry	N/A – Dry	21	0	1	1
	S03	15/06/2022	N/A – Dry	N/A – Dry	21	0	1	1
WV25	S01	15/06/2022	N/A – Dry	N/A – Dry	21	0	1	1
WV26	S01	27/05/2022	N/A – Dry	N/A – Dry	14	0	8	2
WV27	S01	27/05/2022	N/A – Dry	N/A – Dry	14	0	8	2
WV28	S01	27/05/2022	N/A – Dry	N/A – Dry	14	0	8	2
WV29	S01	N/A – Habitat no longer exists	N/A	N/A	N/A	N/A	N/A	N/A
	S02	15/06/2022	N/A – Dry	N/A – Dry	21	0	1	1
WV32	S01	15/06/2022	09/08/2022	10/05/2023	21	0	1	1

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S02	15/06/2022	09/08/2022	10/05/2023	21	0	1	1
	S03	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
	S04	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
WV33	S01	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
WV34	S01	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
	S02	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
	S03	15/06/2022	09/08/2022	11/05/2023	21	0	1	1
	S04	15/06/2022	09/08/2022	12/05/2023	21	0	1	1
WV35	S01	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S02	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S03	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S04	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S05	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S06	Access refused	N/A	N/A	N/A	N/A	N/A	N/A

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
	S07	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S08	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S09	Access refused	N/A	N/A	N/A	N/A	N/A	N/A
	S10	15/05/2023	N/A – Dry	N/A – Dry	14	0	3	1
	S11	15/05/2023	N/A – Dry	N/A – Dry	13	0	1	2
	S12	15/05/2023	N/A – Dry	N/A – Dry	13	0	1	2
WV36	S01	15/05/2023	15/05/2023	09/08/2023	13	0	1	2
	S02	15/05/2023	15/05/2023	09/08/2023	13	0	1	2
	S03	15/05/2023	15/05/2023	09/08/2023	13	0	1	2
	S04	15/05/2023	15/05/2023	09/08/2023	13	0	1	2
	S05	16/05/2023	16/05/2023	09/08/2023	15	0	0	1
	S06	16/05/2023	16/05/2023	09/08/2023	15	0	0	1
	S07	16/05/2023	16/05/2023	Access refused	15	0	0	1
	S08	16/05/2023	16/05/2023	Access refused	15	0	0	1

Transect ID	Subsection	Habitat Assessment Date	Field Signs Survey Date – Visit 1	Field Signs Survey Date – Visit 2	Habitat Assessment Air Temp (°C)	Habitat Assessment Rain (0-5)	Habitat Assessment Cloud Cover (0-8)	Habitat Assessment Wind (Beaufort Scale)
<p>* During the 'Field Signs Survey – Visit 1' for WV14 S26-S33, the watercourse was found to be dry and more densely overgrown with vegetation than previously identified in September 2023. As such, the watercourse was considered to be unsuitable for water vole and was not surveyed for field signs. The watercourse was instead subject to a 'Habitat Assessment' re-survey, to capture the change in suitability of the watercourse.</p>								

B. Appendix: Water vole habitat assessment results

Appendix Table B-1: Water vole habitat assessment results

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
WV01	S01	24/05/2022	Shallow <45°, Earth	2 - 5m	N/A – Dry	Ditch	Dry roadside ditch, densely planted trees on both banks, bank mostly bare earth, short shrubs present in areas, very low frequency of herbs or tall grass.	Bare earth bank, densely planted trees on both sides, occasional to rare abundance of tall herb and grasses, likely to represent a poor food source.	Unsuitable – Dry, isolated roadside ditch.
	S02	24/05/2022	Shallow <45°, Earth	2 - 5m	N/A – Dry	Ditch	Dry roadside ditch, densely planted trees on both banks, 100% shaded from trees, section of bank bare earth, occasional grass and herb vegetation within bank.	Frequent to occasional herb vegetation within ditch and bank, section of bare bank, likely to represent a poor food source.	Unsuitable – Dry, isolated roadside ditch.
	S03	24/05/2022	Steep >45°, Earth	2 - 5m	N/A – Dry	Ditch	Dry roadside ditch, planted trees on both banks, ditch open, occasional to rare frequency grass and tall herb.	Occasional herb vegetation within ditch tall, banks planted with trees on both banks, likely to represent a poor food source.	Unsuitable – Dry, isolated roadside ditch.
	S04	24/05/2022	Steep >45°, Earth	2 - 5m	N/A – Dry	Ditch	Dry roadside ditch, heavily overgrown with herb and grass bankside vegetation on east with	Dense herb vegetation throughout, frequent to occasional	Unsuitable – Dry, isolated roadside ditch.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							semi-mature trees and bushes.	distribution of tall and short grass.	
WV02	S01	Access refused	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S02	Access refused	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S03	24/05/2022	Vertical/ Undercut, Stone	1 - 2m	<0.5m	Ditch	Small stone walled channel within strip of woodland. Residential on the west bank, wood pasture and arable to the east, vegetated banks on either side with small trees and shrub.	Likely to be a good food source for water vole due to vegetation on both banks with tall grass and herbs.	Unsuitable – Stone walled channel with vertical banks that are unsuitable for burrowing.
	S04	24/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Stream	North section of the transect has stone walled and concrete banks, as the channel runs south the banks become bare earth. Residential on the west bank, wood pasture and arable to the east. Channel runs through strip of woodland, with abundant bankside trees and frequent shrubs.	Bank supports abundant trees and frequent shrub. Understory mainly bare earth and is likely to represent a poor food source.	Unsuitable – Stone walled channel with vertical banks that are unsuitable for burrowing.
	S05	24/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Stream	Earth banked channel running through a strip of woodland. Abundant bankside trees on each bank, ivy <i>Hedera sp.</i>	East bank steep with occasional herb vegetation and tree saplings. West bank has dense ivy cover	Unsuitable – stream with poor vegetation structure and

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							along bank. Arable land adjacent on both banks.	and areas of bare ground. Likely to represent a poor food source.	food source for water vole.
	S06	Access refused	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S07	14/07/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Earth banked channel emerging from culvert underneath adjacent road. Small section of woodland on east bank. West bank with abundant tall herb and tall grass.	Good food source, due to abundant tall herb and grass.	Suitable – banks suitable for burrowing with mammal burrows present, likely to be a good food source due to abundant tall herb and grass.
	S08	14/07/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Small earth stream with heavily vegetated banks with abundant tall herbs, grass, and occasional bushes and shrubs.	Likely to be a good food source for water vole due to heavily vegetated banks with tall herb and grass.	Suitable – banks suitable for burrowing with mammal burrows present, likely to be a good food source due to tall herb and grass.
	S09	14/07/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Continuation of earth banked stream; shallow, slow flowing channel	Likely to be a good food source for water vole due to	Suitable – banks suitable for burrowing,

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							with silt banks. Bankside vegetation not as dense as previous subsections, with areas of bare earth; but still with frequent tall herb and grass.	vegetated banks with frequent tall herb and grass.	likely to be a good food source due to frequent tall herb and grass.
	S10	14/07/2022	N/A	N/A	<0.5m	Ditch	Dry ditch within heavily shaded and wooded area.	Likely to be a poor food source due to little to no abundance of herb or grass.	Unsuitable – Dry drainage ditch within wooded patch with bare earth banks and a lack of a good food source for water vole.
	S11	14/07/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Shallow slow-flowing stream. Both banks heavily vegetated with abundant tall herbs and grass. Stream gets deeper in eastern section of the transect but remains less than 0.5m.	Likely to be a good food source for water vole due to abundant tall herbs and grass on both banks.	Suitable – banks suitable for burrowing, likely to be a good food source due to abundant tall herb and grass.
	S12	14/07/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Continuation of wet ditch, channel begins to become boggy with areas of wet grass within the channel. Bankside vegetation with abundant tall grass and	Likely to be a good food source due to abundant tall herbs and grass vegetation on both banks.	Suitable – banks suitable for burrowing, likely to be a good food source due to abundant tall

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							herbs on both banks.		herb and grass.
	S13	14/07/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Continuation of wet ditch, channel boggy with areas of wet grass within the channel. Bankside vegetation with abundant tall grass and herbs on both banks.	Likely to be a good food source due to abundant tall herbs and grass vegetation on both banks.	Suitable – banks suitable for burrowing, likely to be a good food source due to abundant tall herb and grass.
WV03	S01	17/06/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Unmanaged ditch overgrown with scrub adjacent to arable field. Dry ditch at time of survey with no past indications of standing water.	Tall grasses, with scattered scrub and occasional shrubs.	Unsuitable – Dry ditch with no previous indications of standing water.
	S02	17/06/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Unmanaged ditch overgrown with scrub adjacent to arable field. Dry ditch at time of survey with no past indications of standing water.	Tall grasses, with scattered scrub and occasional shrubs.	Unsuitable – Dry ditch with no previous indications of standing water.
	S03	17/06/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Unmanaged ditch overgrown with scrub adjacent to arable field. Dry ditch at time of survey with no past indications of standing water.	Tall grasses, with scattered scrub and occasional shrubs.	Unsuitable – Dry ditch with no previous indications of standing water.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
WV04	S01	24/05/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A – Ditch scoped in from Ordnance Survey (OS) mapping but found to not be present on site.
	S02	24/05/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A – Ditch scoped in from OS mapping but found to not be present on site.
WV05	S01	06/09/2022	Shallow <45°, Earth	Up to 1m	<0.5m	Ditch	1m wide channel with 45° sloping earth banks up to 1m high. Vegetated with frequent short grass, ivy, nettle <i>Urtica dioica</i> .	Areas of short grass and herb and some areas of bare earth. Likely to represent an average food source.	Suitable – banks suitable for burrowing with a vegetation structure that is likely to represent an average food source.
	S02	06/09/2022	Flat <10°, Earth	Up to 1m	<0.5m	Ditch	1m wide channel with slow flowing shallow water. Flat earth banks that are sparsely vegetated and overshadowed by woodland. Areas with thick ivy growth.	Sparsely vegetated banks that are overshadowed by woodland with little to no tall grass and herb, apart from sections of thick ivy growth.	Unsuitable – banks flat and unsuitable for burrowing and sparsely vegetated banks that are likely to

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
									represent a poor food source.
	S03	06/09/2022	Flat <10° - Vertical/ Undercut, Earth	Up to 1m	<0.5m	Ditch	1m wide ditch with slow flowing shallow water. Flat earth walled banks towards northern extent of transect. As channel runs south, banks become vertical and overshadowed by sycamore trees. Thick ivy growth dominates both banks.	Banks dominated by thick ivy growth throughout. Little to no tall herb or grass, vegetation overshadowed by overhead trees.	Unsuitable – banks unsuitable for burrowing and bankside vegetation is dominated by thick ivy growth.
	S04	17/06/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Densely vegetated steep earth banks; dominated by bramble <i>Rubus fruticosus</i> , nettle and some ruderal. Trees provide shelter on right-hand bank. Slow-flowing water through a 1m wide channel.	Bankside vegetation dominated with tall herb and grass, which is likely to represent a good food source.	Suitable – bankside vegetation with tall herb and grass which is likely to represent a good food source for water vole.
	S05	17/06/2022	N/A	N/A	N/A	N/A	Inaccessible.	N/A	No or limited access for survey.
	S06	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Roadside ditch that is likely to be permanent. Steep earth banks dominated by short and tall grass on the north	North bank vegetation dominated by grass with occasional tall herb on both banks.	Suitable – banks suitable for burrowing, bankside vegetation

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							bank and ivy and a hedgerow on the south bank. Presence of aquatic macrophages e.g., water plantain <i>Alismataceae sp.</i> , water cress <i>Nasturtium officinale</i> .		likely to represent a good food source with grass and tall herb.
	S07	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Roadside ditch that is likely to be permanent. Steep earth banks dominated by tall herb vegetation and occasional shrubs. Presence of aquatic macrophages e.g., water plantain, water cress. Partly shaded by hedgerow and trees.	Tall herb vegetation dominates both banks, which is likely to represent a good food source for water vole.	Suitable – banks suitable for burrowing and bankside vegetation dominated by tall herbs.
	S08	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Roadside ditch that is likely to be permanent Steep earth banks dominated by tall herb vegetation and occasional shrubs. Presence of aquatic macrophages e.g., water plantain, water cress. Partly shaded by hedgerow and trees.	Tall herb vegetation dominates both banks, which is likely to represent a good food source for water vole.	Suitable – banks suitable for burrowing and bankside vegetation dominated by tall herbs.
	S09	24/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Drain	Small wet ditch opposite highways estate, heavily	Bankside vegetation dominated by grass	Suitable – banks suitable

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							vegetated with grass and herbs, occasional small shrub and young trees along banks.	and tall herb, which is likely to represent a good food source for water vole.	for burrowing and bankside vegetation is dominated by grass and tall herb.
	S10	24/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Drain	Small wet ditch opposite highways estate, heavily vegetated with grass and herbs, occasional small shrub and young trees along banks.	Bankside vegetation dominated by grass and tall herb, which is likely to represent a good food source for water vole.	Suitable – banks suitable for burrowing and bankside vegetation is dominated by grass and tall herb.
	S11	26/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Drain	Culverted drainage ditch adjacent to urban road. Water highly turbid and dirty, with litter and other pollutants. Bankside vegetation dominated by tall herb and grass on north bank and tall herbs and trees on south bank.	Bankside vegetation with tall herb and grass vegetation.	Unsuitable – ditch isolated in a dense urban area next to a busy road crossing. Only access to this ditch would be through the connecting culverts that are unsuitable for crossing due to their length and being full of mud and silt.

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WV06	S01	24/05/2022	Steep >45°, Earth	2 - 5m	N/A - Dry	Ditch	Steep dry ditch, completely overgrown with common nettle and scrub. Shaded by trees and shrub running along northern bank.	Herb and grass vegetation present, likely to be a good food source.	Unsuitable – Dry steep walled ditch overgrown with nettle and scrub.
	S02	24/05/2022	N/A	N/A	N/A	N/A	Inaccessible.	N/A	No or limited access for survey.
	S03	24/05/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Continued dry grassy shallow ditch, signs of wetland vegetation including some reeds. Ditch dominated by herb vegetation with some reeds.	Herb and reeds, likely to be a good food source.	No or limited access for survey.
	S04	24/05/2022	Flat <10°, Earth	1 - 2m	N/A - Dry	Ditch	Dry grassy ditch with flat earth banks, unimproved grass on both sides, grass and herb within ditch.	Bankside vegetation dominated by short grass with occasional tall herb.	Unsuitable – banks unsuitable for burrowing.
	S05	24/05/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Continued dry grassy shallow ditch, signs of wetland vegetation with occasional reeds. Bankside vegetation dominated by tall herbs and grass.	Tall herb, grass and reeds present, likely to be a good food source.	Suitable – Ditch dry at time of survey but indications of wetland vegetation were present. Given the presence of standing water this ditch is

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
									likely to be suitable for water vole.
	S06	24/05/2022	Flat <10°, Earth	Up to 1m	<0.5m	Ditch	Boggy shallow earth trench with excess damage from livestock poaching. Abundant grass on the banks with areas of mud and bare earth. Grass within ditch. Scrub and tall herb on eastern bank. Ditch within grazing horse pasture.	Tall herb on eastern bank.	Unsuitable – flat banked ditch with excess damage from livestock poaching, unsuitable for burrowing.
	S07	24/05/2022	Flat <10°, Earth	Up to 1m	N/A - Dry	Ditch	Dry shallow trench, tall herb and hedgerow running alongside. Banks with grass and areas of bare earth and mud, grass also present within ditch. Hedgerow and semi-mature trees on eastern bank along the southern extent of the transect. Ditch within horse grazed pasture.	Grass dominates both banks, likely to represent a moderate food source.	Unsuitable – flat banked ditch with excess damage from livestock poaching, unsuitable for burrowing.
	S08	24/05/2022	Flat <10°, Earth	Up to 1m	N/A - Dry	Ditch	Dry shallow earth banked trench, with tall herb and hedgerow running alongside eastern bank. Areas of grass and bare earth	Grass dominates both banks, likely to represent a moderate food source.	Unsuitable – flat banked ditch with excess damage from livestock

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							banks, grass also present within the ditch. Ditch within horse grazed pasture.		poaching, unsuitable for burrowing.
	S09	24/05/2022	Flat <10°, Earth	Up to 1m	N/A - Dry	Ditch	Dry shallow earth banked trench, with tall herb and hedgerow running alongside the eastern bank. Areas of grass and bare earth banks, grass also present within the channel.	Grass dominates both banks, likely to represent a moderate food source.	Unsuitable – flat banked ditch with excess damage from livestock poaching, unsuitable for burrowing.
	S10	24/05/2022	Flat <10°, Earth	1 - 2m	N/A - Dry	Ditch	Dry shallow earth banked trench, with tall herb and hedgerow running alongside the eastern bank. Areas of grass and bare earth banks, grass also present within the channel.	Grass dominates both banks, likely to represent a moderate food source.	Unsuitable – flat banked ditch with excess damage from livestock poaching, unsuitable for burrowing.
WV07	S01	25/05/2022	Steep >45°, Earth	1 - 2m	<0.5m	Ditch	Steep sided ditch bordered by grazed arable fields on both banks. Shaded along 70% of its surveyed length by scrub and tall herb vegetation with rare bankside trees present.	Ditch channel features dominant tall herb vegetation with occasional grass and sedge species on the banks, these vegetative characteristics are likely to represent a	Suitable – Steep sided banks provide suitable habitat for burrow creation and there is a range of suitable

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
								moderate food source.	vegetation to provide a moderate food source.
	S02	25/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Ditch located within grazed grassland habitat which functions as an outfall for the lakes located at the British Sugar Factory. Access was limited during the survey but surveyors noted abundant bankside trees and tall herb vegetation with occasional shrubs and tall grass swards.	Ditch channel features dominant tall herb vegetation with occasional grass species on the banks, these vegetative characteristics are likely to represent a moderate food source.	No or limited access for survey.
	S03	25/05/2022	Steep >45°, Earth	2 - 5m		Ditch	Inaccessible ditch, outflow coming from British Sugar Factory lakes, heavily vegetated with herbs and trees.	Good.	No or limited access for survey.
	S04	25/05/2022	Steep >45°, Earth	2 - 5m		Ditch	Inaccessible ditch, outflow coming from British Sugar Factory lakes, heavily vegetated with herbs and trees.	Good.	No or limited access for survey.
WV08	S01	25/05/2022	Flat <10°, Earth	Up to 1m	N/A	Ditch	Ditch with a shallow bank profile dominated by a grassy sward with occasional tall herb vegetation. The ditch is	Short grassy sward with occasional tall herb vegetation that is likely to provide a moderate food	Unsuitable – due to the shallow banks, and regular disturbance

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							bordered on both sides by grazed grassland and is regularly disturbed.	source.	from cattle. The ditch was also dry at the time of the survey and it is considered that the ditch is dry for long periods.
	S02	25/05/2022	Flat <10°, Earth	Up to 1m	N/A	Ditch	Ditch with a shallow bank profile dominated by a grassy sward with occasional tall herb vegetation. The ditch is bordered on both sides by grazed grassland and is regularly disturbed. A hedgerow lies adjacent to the ditch towards the southern end of the surveyed section where the ground conditions are wetter, and the habitat present is more representative of marshy grassland.	Short grassy sward with occasional tall herb vegetation that is likely to provide a moderate food source.	Unsuitable – due to the shallow banks, and regular disturbance from cattle. The ditch was also dry at the time of the survey, and it is considered that the ditch is dry for long periods.
	S03	25/05/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Ditch featuring shallow (<0.5m) standing water which is bordered by an arable field to the north and semi-improved grassland to the south.	The vegetation structure and food availability is considered to be poor due to the low levels of grass and	Unsuitable – due to high levels of shading, low water levels and poor food

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							The ditch is completely shaded along the surveyed section with the vegetation types present including dominant bankside trees with frequent shrubs, occasional tall herb and short grass with rare tall grassy swards.	tall herb present.	availability this ditch is unsuitable for water vole.
	S04	25/05/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Ditch featuring shallow (<0.5m) standing water with bare earth banks, bordered by arable land to the north and semi-improved grassland to the south. The ditch gets progressively wider and deeper towards the eastern section. The vegetation along the surveyed section is characterised by bare earth banks with abundant bankside trees.	Bare earth banks that are heavily shaded by bankside trees. Likely to represent a poor food source for water vole.	Unsuitable – due to high levels of shading and poor food availability this ditch is unsuitable for water vole.
	S05	25/05/2022	N/A	2 – 5m	<0.5m	Ditch	Ditch featuring shallow (<0.5m) standing water with bare earth banks, bordered by arable land to the north and semi-improved grassland to	Bare earth banks that are heavily shaded by bankside trees. Likely to represent a poor food source for	Unsuitable – due to high levels of shading and poor food availability this

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							the south. The ditch gets progressively wider and deeper towards the eastern section. The vegetation along the surveyed section is characterised by bare earth banks with abundant bankside trees.	water vole.	ditch is unsuitable for water vole.
	S06	25/05/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Ditch located within woodland featuring low levels (<0.5m) of standing water. Habitats bordering the ditch comprise woodland to the south and a lake with a small area of woodland and scrub to the north The ditch is 100% shaded along the surveyed length with vegetation present including abundant trees, frequent scrub with occasional tall herb and rare grass species.	The vegetation structure and food availability is considered to be poor due to the low levels of grass and tall herb present.	Unsuitable – It is considered that due to high levels of shading, low water levels and poor food availability this ditch is unsuitable for water vole.
	S07	25/05/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Ditch located within woodland with low (<0.5m) levels of standing water. Banks	Frequent tall herb vegetation and occasional grass species provide a	Unsuitable – It is considered that due to high levels of

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							are set at <45° and comprise bare earth with abundant trees and frequent scrub on the bank tops. Surrounding habitats comprise woodland to the south, scrub and a small lake to the north and trainlines to the west.	moderate source of food.	shading and low water levels and this ditch is unsuitable for water vole.
WV09	S01	25/05/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Stream	Minor tributary of the River Trent with a slow moving current with a depth of <0.5m. To the south of the ditch lies a trainline and to the north semi-improved grassland. In-channel vegetation is dominated by common reed. The bank tops are dominated by tall herb vegetation.	Dominant reed vegetation, abundant tall herb and rare grass species are likely to provide a good source of food.	Suitable – banks suitable for burrowing and dominant reed vegetation, and abundant tall herb and grass species are likely to provide a good food source for water vole.
	S02	25/05/2022	Flat <10°, Earth	2 - 5m	<0.5m	Stream	Drainage ditch with shallow banks and with slow flowing water with a depth of <0.5m, bordered on all sides by semi-improved grassland. Vegetation was characterised by	Frequent tall herb vegetation, reeds and sedges with rare grass species provide a good source of food.	Suitable – The ditch features good food availability and suitable bank features for burrowing water vole and

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							frequent tall herb vegetation, reeds and sedge species with occasional trees and shrubs.		is therefore considered to be suitable for water vole.
	S03	Scheduled for 2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S04	Scheduled for 2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S05	25/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Heavily vegetated ditch with low (<0.5m) levels of standing water which increase in depth towards the northern section. Surrounding habitat comprises woodland to the east and a lake to the west. In channel vegetation is characterised by abundant common reed with bankside vegetation characterised by frequent trees and occasional scrub.	Abundant tall herb vegetation, reeds and sedges with rare grass species provide a good source of food.	Suitable – The ditch features good food availability and suitable bank features for burrowing water vole and is therefore considered to be suitable for water vole.
	S06	25/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Ditch located in woodland with low (<0.5m) levels of standing water. Surrounding habitats comprise woodland to the east and a lake to	Abundant tall herb vegetation, reeds and sedges with rare grass species provide a good source of food.	Suitable – The ditch features good food availability and suitable bank features for burrowing

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							the west. Vegetation was characterised by abundant trees and tall herb with frequent shrubs and reeds with rare grass species.		water vole and is therefore considered to be suitable for water vole.
	S07	25/05/2022	Flat <10°, Earth	1 - 2m	N/A	Ditch	Flat-banked dry ditch located within semi-improved grassland field. Vegetation was characterised by grassland with frequent areas of tall sward grass species.	Frequent grass species and occasional tall herb vegetation provide a good quality food source for water vole.	Unsuitable – flat earth banked ditch within semi-improved grassland, has no past indicators of being wet.
	S08	25/05/2022	Flat <10°, Earth	1 - 2m	N/A	Ditch	Flat-banked dry ditch located within semi-improved grassland field. Vegetation was characterised by grassland with frequent areas of tall sward grass species.	Frequent grass species and occasional tall herb vegetation provide a good quality food source for water vole.	Unsuitable – flat earth banked ditch within semi-improved grassland, has no past indicators of being wet.
WV10	S01	25/05/2022	Steep >45°, Earth	2 - 5m	0.5 - 1m	Drain	Steep sided land drain in an urban setting featuring standing water of 0.5 to 1m depth. No in channel vegetation was present with the banks dominated by tall herb.	Banks featuring dominant tall herb with occasional grass species provide good food availability for water vole.	Suitable – as a result of the high-water levels, bank suitability and good food availability this

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
									ditch is considered suitable for water vole.
	S02	25/05/2022	Steep >45°, Earth	2 - 5m	0.5 - 1m	Drain	Steep sided land drain in an urban setting featuring standing water of 0.5 to 1m depth. No in channel vegetation was present with the banks dominated by tall herb.	Banks featuring dominant tall herb with occasional grass species provide good food availability for water vole.	Suitable – as a result of the high-water levels, bank suitability and good food availability this ditch is considered suitable for water vole.
	S03	25/05/2022	Steep >45°, Earth	2 - 5m	0.5 - 1m	Drain	Steep sided land drain in an urban setting featuring standing water of 0.5 to 1m depth. No in channel vegetation was present with the banks dominated by tall herb.	Banks featuring dominant tall herb with occasional grass species provide good food availability for water vole.	Suitable – as a result of the high-water levels, bank suitability and good food availability this ditch is considered suitable for water vole.
WV11	S01	17/06/2022	Shallow <45°, Earth	1 - 2m	0.5 – 1m	Drain	Concrete-banked drain adjacent to the A46. Likely to be a storm drain. Area with scrub encroachment and likely irregularly managed.	Scrub encroachment over the banks of the ditch with occasional to rare levels of grass.	Unsuitable – concrete-banked ditch that is unsuitable for burrowing.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
WV12	S01	17/06/2022	Shallow <45°, Reinforced (man-made)	1 - 2m	1 – 2m	Drain	Concrete-banked drain adjacent to the A46. Likely to be a storm drain. Area with scrub encroachment with abundant bankside trees. Likely to be irregularly managed.	Abundant bankside trees and occasional scrub. Occasional to rare distribution of grass.	Unsuitable – concrete-banked ditch that is unsuitable for burrowing.
	S02	17/06/2022	Shallow <45°, Reinforced (man-made)	1 - 2m	1 – 2m	Drain	Continuation of concrete-banked drain that is culverted under the A616 and adjacent to the A46. Area with scrub encroachment with abundant bankside trees. Likely to be irregularly managed.	Abundant bankside trees and occasional scrub. Occasional to rare distribution of grass.	Unsuitable – concrete-banked ditch that is unsuitable for burrowing.
WV13	S01	17/06/2022	Shallow <45°, Reinforced (man-made)	1 - 2m	1 – 2m	Drain	Concrete-banked drain that is adjacent to the A46 and A617. Area with scrub encroachment and areas of abundant tall herb and grass vegetation.	Abundant tall herb and grass vegetation, with areas of scrub encroachment.	Unsuitable – concrete-banked ditch that is unsuitable for burrowing.
WV14	S01	10/11/2022	Flat <10°	2 - 5m	0.5 – 1m	Ditch	The Old Trent Dyke, flat bare banks that are shaded by overhead trees. Water with visible pollution, likely from adjacent arable land.	Shaded bare earth banks with little to no herb or grass species. Likely to represent a poor food source for water vole.	Unsuitable – Flat earth banks that are unsuitable for burrowing. Banks are also bare earth that are

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
									100% shaded by trees.
	S02	10/11/2022	Flat <10°	2 - 5m	0.5 – 1m	Ditch	The Old Trent Dyke, flat bare banks that are shaded by overhead trees. Water with visible pollution, likely from adjacent arable land.	Shaded bare earth banks with occasional herb and grass species. Likely to represent a poor food source for water vole.	Unsuitable – flat earth banks that are unsuitable for burrowing. Banks are also bare earth that are 100% shaded by trees.
	S03	10/11/2022	Shallow <45°, Earth	2 - 5m	0.5 – 1m	Ditch	Section of the Old Trent Dyke with standing water that is covered in duckweed. Shallow earth banks on both sides of the channel. The south bank has been cut, but looked to be tall herb, grass and scrub from the remnants of the vegetation. The north bank of the channel is vegetated with occasional reeds, herb and scrub.	Vegetated northern bank of the channel has occasional tall reed, herb and grass species which is likely to represent a moderate food source.	Suitable – banks suitable for burrowing with vegetation that is likely to be a moderate food source for water vole. Suitability of channel likely to increase when the southern bank vegetation regrows.
	S04	10/11/2022	Shallow <45°, Earth	2 - 5m	0.5 – 1m	Ditch	Section of the Old Trent Dyke with standing water that is covered in duckweed <i>Lemna minor</i> .	Vegetated southern bank of the channel has occasional tall reed, herb and	Suitable – banks suitable for burrowing with

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							Reedbed present within the channel. South bank vegetation has been mown with short grass and herb. The north bank has frequent willow <i>Salix sp.</i> scrub that shades the channel.	frequent grass species which is likely to represent a moderate food source.	vegetation that is likely to be a moderate food source for water vole.
	S05	10/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Continuation of the Old Trent Dyke with standing water covered in duckweed with shallower water than the northern sections of the channel. The south bank has been cut, but looked to be tall herb, grass and scrub from the remnants of the vegetation. The northern bank of the channel has frequent reeds and occasional herb and grass, and a rare distribution of scrub.	The northern bank of the channel has frequent reeds and occasional herb and grass, and a rare distribution of scrub, which is likely to represent a moderate food source.	Suitable – banks suitable for burrowing with vegetation that is likely to be a moderate food source for water vole. Suitability of channel likely to increase when the southern bank vegetation regrows.
	S06	10/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Continuation of the Old Trent Dyke, section more waterlogged and wet under the foot with areas of shallow pools of water. Reedbed is present within the channel. The south bank	Frequent to occasional herb and grass vegetation on both banks, with reeds within the channel. Likely to represent a moderate food	Suitable – watercourse likely to be suitable at higher water levels due to banks with suitable

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							is mown with frequent short grass and herb. The north bank is vegetated with occasional tall herb and scrub. Section likely to be suitable at higher water levels.	source.	profiles for burrowing and vegetation structure that would represent a good availability of food.
	S07	25/05/2022	Shallow <45°, Earth	2 - 5m	1 - 2m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top vegetation is characterised by frequent common reed with occasional tall herb vegetation and trees.	High levels of tall herb and grass species are likely to provide a good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S08	25/05/2022	Shallow <45°, Earth	2 - 5m	1 - 2m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top vegetation is characterised by frequent common reed with occasional tall herb vegetation and trees.	High levels of tall herb and grass species are likely to provide good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S09	26/05/2022	Shallow <45°, Earth	2 - 5m	1 - 2m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45°	High levels of tall herb, reeds and grass species are	Suitable – good food availability and

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							with 1-2m of slow flowing water. Bank top vegetation is characterised by frequent tall herb vegetation with occasional reeds, trees and shrubs. Sections of the bank are shaded by mature trees and shrub. Reedbeds present within the channel.	likely to provide good food availability.	a diverse vegetation structure in combination with deep flowing water.
	S10	26/05/2022	Shallow <45°, Earth	2 - 5m	1 - 2m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top vegetation is characterised by frequent tall herb vegetation with occasional reeds, trees and shrubs. Sections of the bank are shaded by mature trees and shrub. Reedbeds present within the channel.	High levels of tall herb, reeds and grass species are likely to provide good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S13	26/05/2022	Shallow <45°, Earth	2 - 5m	0.5 – 1m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top	High levels reeds, sedges and grass species provide good food availability.	Suitable – good food availability and a diverse vegetation

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							vegetation is characterised by abundant reeds and tall grass species, frequent tall herbs and a rare distribution of shrubs and bushes.		structure in combination with deep flowing water.
	S14	26/05/2022	Shallow <45°, Earth	2 - 5m	0.5 – 1m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top vegetation is characterised by abundant reeds and tall grass species with frequent tall herb vegetation.	High level reeds, sedges and grass species provide good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S15	26/05/2022	Shallow <45°, Earth	2 - 5m	0.5 – 1m	Stream	Section of Old Trent Dyke with shallow banks set between 5° and 45° with 1-2m of slow flowing water. Bank top vegetation is characterised by abundant reeds and tall grass species with frequent tall herb vegetation.	High level reeds, sedges and grass species provide good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S16	26/05/2022	Steep >45°, Earth	2 - 5m	0.5 – 1m	Stream	Section of Old Trent Dyke with steep banks set over 45° 0.5-1m of	High level reeds, sedges and grass species provide	Suitable – good food availability and

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							slow flowing water. Bank top vegetation is characterised by abundant reeds and tall herb vegetation, frequent submerged vegetation, and occasional grass species.	good food availability.	a diverse vegetation structure in combination with deep flowing water.
	S17	26/05/2022	Steep >45°, Earth	2 - 5m	0.5 - 1m	Stream	Section of Old Trent Dyke with steep banks set over 45° 0.5-1m of slow flowing water. Bank top vegetation is characterised by abundant tall herb and tall grass vegetation, frequent reeds on the banks and within the channel, and frequent submerged vegetation.	High levels tall herb and grass species provide good food availability.	Suitable – good food availability and a diverse vegetation structure in combination with deep flowing water.
	S18	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Continuation of the Old Trent Dyke south of the railway embankment. Earth walled ditch with steep slope on west bank, shallow on east bank. Ditch vegetation dominated by reeds and tall grasses. A rare abundance of bankside trees is also present on	Likely to be a good food source due to tall grass, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs.	Suitable – dry at the time of survey but indications of wetland vegetation suggest the ditch is regularly wet. When the ditch holds

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							the east bank. Indian balsam <i>Impatiens glandulifera</i> also present at a rare abundance.		water, it is likely to be suitable for water vole due to the bank profile and good food availability.
	S19	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Section of the Old Trent Dyke, that is steep earth banked. Ditch is dominated with reeds and tall grasses, with nettles and mature willow trees along east bank. Steep slope on west bank, shallow on east bank.	Likely to be a good food source due to dense tall grass, flowers, berries, seed heads from mature willow tree and mature hawthorn.	Suitable – dry at the time of survey but indications of wetland vegetation suggest the ditch is regularly wet. When the ditch holds water, it is likely to be suitable for water vole due to the bank profile and good food availability.
	S20	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke which is steep earth banked. A line of mature willow trees with in-channel dominated by	Dense herb (nettles dominate) and brambles on western bank. Flowers, berries,	Suitable – ditch mostly dry at the time of survey but indications of

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							reeds, banks dominated by grass and herbs (predominantly nettles). Steep slope on west bank, shallow on east bank. The ditch is predominantly dry with areas of shallow water at southern extent. Indian balsam also present at a rare abundance.	seed heads from mature willow tree and mature hawthorn. Dense reeds in the ditch. Vegetation structure is likely to represent a good food source.	wetland vegetation suggest the ditch is regularly wet. When the ditch holds water, it is likely to be suitable for water vole due to the bank profile and good food availability.
	S21	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke with a steep earth western bank, and a shallow earth eastern bank. The east side of the bank is dominated by bramble, nettle and hawthorn <i>Crataegus monogyna</i> . Scattered mature willow trees are also present along the east bank. Thistle <i>Cirsium sp.</i> , willowherb <i>Chamerion sp.</i> , nettle and Indian balsam are present on the west bank. Inside the channel	Likely to be a moderate availability of food due to reeds, willowherb, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs.	Suitable – banks with suitable profiles for burrowing and a moderate food availability for water vole due to the vegetation structure.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							there is shallow standing water with reedbeds and duckweed.		
	S22	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke with steep earth banks and shallow water. Indian balsam and thistle dominate the south steep bank, with willowherb also present. In-channel reedbed and grassy north bank with some sections of bare ground and shallow bank (evidence of historic poaching, but the bank is now fenced off).	Likely to be a moderate availability of food due to reeds, willowherb, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs.	Suitable – banks with suitable profiles for burrowing and a moderate food availability for water vole due to the vegetation structure.
	S23	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke with steep earth banks and shallow water. Scattered mature trees along the western bank. Bankside vegetation dominated with Indian balsam with frequent reeds on both banks.	Likely to be a moderate availability of food due to reeds, willowherb, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs.	Suitable – banks with suitable profiles for burrowing and a moderate food availability for water vole due to the vegetation structure.
	S24	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke with earth banks	Likely to be a good food source due to	Suitable – banks with

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							and shallow water. Steep western bank, east bank is shallow. Bankside vegetation is dominated by Indian balsam and nettles dominate on the south bank, and bramble and willow on north bank. Occasional tall grasses present on both banks and duckweed present in the ditch. Scattered mature willow trees, hawthorn and bramble on north bank.	tall herbs, grasses, willowherb, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs.	suitable profiles for burrowing and a moderate food availability for water vole due to the vegetation structure.
	S25	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke with steep earth walled banks and shallow water. Extensive Indian balsam, thistle and dense tall grass on the southern bank. Cows fenced off on the northern bank which is now preventing poaching. Mature willow trees are scattered along the northern bank. Reedbed dominates within the ditch.	Likely to be a good food source due to tall herbs, grasses, willowherb, flowers, berries, seed heads from mature willow tree and mature hawthorn shrubs	Suitable – banks with suitable profiles for burrowing and a moderate food availability for water vole due to the vegetation structure.

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	S26	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Section of the Old Trent Dyke with steep earth banks. Channel is dry in this location and overgrown with tall herb vegetation. Bramble, bindweed, nettles dominating the northern bank with some grass and scattered mature trees along the dry ditch. Common nettle, willowherb dominating the southern bank.	Dry ditch but, nettles, grasses and willowherb are likely to offer moderate food source.	Suitable – section of the ditch is dry but has vegetation that is indicative of holding water at some points in the year. Bank profiles are suitable for burrowing and the vegetation structure is likely to offer a good food source.
	S27	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Section of the Old Trent Dyke that has steep earth banks and is predominately dry with areas of very shallow stagnant water containing duckweed. Bankside vegetation dominated by dense scrub and bramble, with occasional tall herb and Indian balsam along the northern bank. The southern bank is	Reed, nettles, grasses and willowherb are likely to offer a good food source.	Suitable – predominately dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation structure is likely to offer a good food

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							dominated by tall herb with some hedge bindweed <i>Calystegia sepium</i> . Some reeds and bare ground in the ditch.		source.
	S28	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Indian balsam is dominant on both banks. Bare ground cover within the ditch and frequent grass patches on the sides. Dense bramble on southern bank and a mature tree with dense scrub along the northern bank.	Dry ditch but nettles, grasses and willowherb are likely to offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation structure is likely to offer a good food source.
	S29	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Indian balsam is present on both banks. Eastern bank vegetation is comprised of dense bramble scrub, overgrown hawthorn hedge / line of trees, bindweed. Western bank	Dry ditch but bulrush, nettles and willowherb are likely to offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							vegetation is comprised of abundant willowherb, bindweed and occasional tall grasses. Rare distribution of reeds within the channel.		structure is likely to offer a good food source.
	S30	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Indian balsam present on both banks. Southern bank vegetation comprised of an abundant cover of nettle and willowherb, with thistle and bindweed. A line of trees dominating the eastern bank with hedge bindweed. Some reed and Indian balsam present within the dry ditch.	Dry ditch but reed, nettles and willowherb are likely to offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation structure is likely to offer a good food source.
	S31	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Occasional cover of bulrush <i>Typha sp.</i> and willowherb in the ditch. Hawthorn dominating the southern bank with areas of bramble scrub. Nettles, willowherb and Indian	Dry ditch but bulrush, nettles and willowherb are likely to offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							balsam dominate the northern bank.		vegetation structure is likely to offer a good food source.
	S32	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Hawthorn dominating the south bank. Nettles, willowherb and Indian balsam dominate the north bank.	Dry ditch but bramble, hawthorn, nettles, elder and willowherb offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation structure is likely to offer a good food source.
	S33	06/09/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Ditch	Dry section of the Old Trent Dyke with steep earth banks. Ditch mainly overgrown within the channel and dominated by nettle. Dry ditch (mostly bare ground). Hawthorn dominating the northern bank, some snowberry <i>Symphoricarpos sp.</i> Indian balsam and	Willowherb and nettles are likely to offer a good food source.	Suitable – ditch dry with past indications of the ditch holding water. Bank profiles are suitable for burrowing and the vegetation structure is

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							willowherb dominates the southern bank.		likely to offer a good food source.
WV16	S01	26/05/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Drain	Steep banked drainage ditch located within arable field. Drain was dry at the time of the survey but did feature some wetter, boggy areas. The vegetation was characterised by abundant sedges and tall sward grass species with frequent tall herb vegetation.	Abundant sedges and tall sward grass species with frequent tall herb vegetation provides good vegetation structure and food availability.	Unsuitable – small drainage ditch that is likely to be dry most of the year and unsuitable for water vole.
	S02	26/05/2022	Steep >45°, Earth	Up to 1m	N/A - Dry	Drain	Steep banked drainage ditch located within arable field. Drain was dry at the time of the survey but did feature some wetter, boggy areas. The vegetation was characterised by abundant sedges and tall sward grass species with frequent tall herb vegetation.	Abundant sedges and tall sward grass species with frequent tall herb vegetation provides good vegetation structure and food availability.	Unsuitable – small drainage ditch that is likely to be dry most of the year and unsuitable for water vole.
WV18	S01	09/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Waterlogged earth banked ditch within a strip of woodland. North bank is flat, south bank steep. Shallow water in	Low availability of herb and grass species vegetation which is unlikely to offer a food source	Unsuitable – wooded ditch with a poor vegetation structure

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							areas, also large dry areas as well. Bankside vegetation dominated by mature trees with a rare distribution of tall herb and grass species.	for water vole.	which is unlikely to support water vole.
	S02	09/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Waterlogged earth banked ditch within a strip of woodland. North bank is flat, south bank steep. Shallow water in areas, also large dry areas as well. Bankside vegetation dominated by mature trees with a rare distribution of tall herb and grass species.	Low availability of herb and grass species vegetation which is unlikely to offer a food source for water vole.	Unsuitable – wooded ditch with a poor vegetation structure which is unlikely to support water vole.
	S03	09/11/2022	Shallow <45°, Earth	2 - 5m	N/A - Dry	Ditch	Continuation of ditch within woodland strip. Ditch now runs dry with no areas of standing water. Banks now mostly bare earth abundant bankside trees, no vegetation in shaded areas other than trees and bankside scrub.	Low availability of herb and grass species vegetation which is unlikely to offer a food source for water vole.	Unsuitable – dry wooded ditch with a poor vegetation structure which is unlikely to support water vole.
	S04	09/11/2022	Shallow <45°, Earth	2 - 5m	N/A - Dry	Ditch	Dry wooded ditch with indications of previously holding water due to a rare abundance of reeds. Bankside	Rare abundance of reeds and tall herb in areas, but mostly bare earthed banks overshadowed by	Unsuitable – dry wooded ditch with a poor vegetation

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							vegetation mostly bare earth bank, abundant bankside trees, rare abundance of reeds and herb vegetation in unshaded areas.	woodland, which is likely to represent a poor food source.	structure which is unlikely to support water vole.
WV19	S01	09/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Waterlogged earth banked ditch within a strip of woodland along the railway embankment. North bank is flat, south bank steep. Shallow water in areas, also large dry areas as well. Banks dominated by mature trees with occasional scrub and rare abundance of grass and tall herb.	Rare abundance of tall herb and grass in areas, but mostly bare earthed banks overshadowed by woodland, which is likely to represent a poor food source.	Unsuitable – dry wooded ditch with a poor vegetation structure which is unlikely to support water vole.
	S02	09/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Waterlogged earth banked ditch within a strip of woodland along the railway embankment. North bank is flat, south bank steep. Shallow water in areas, also large dry areas as well. Banks dominated by mature trees with occasional scrub and rare	Rare abundance of tall herb and grass in areas, but mostly bare earthed banks overshadowed by woodland, which is likely to represent a poor food source.	Unsuitable – dry wooded ditch with a poor vegetation structure which is unlikely to support water vole.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							abundance of grass and tall herb.		
WV20	S01	09/11/2022	Shallow <45°, Earth	2 - 5m	N/A - Dry	Ditch	Dry earth banked ditch within a strip of woodland along the railway embankment. North bank is flat, south bank steep Dominated by tress on banks and within ditch. Rare abundance of tall herb and grass on northern bank.	Rare abundance of tall herb and grass in areas, but mostly bare earthed banks overshadowed by woodland, which is likely to represent a poor food source.	Unsuitable – dry wooded ditch with a poor vegetation structure which is unlikely to support water vole.
	S02	09/11/2022	Shallow <45°, Earth	2 - 5m	<0.5m	Ditch	Waterlogged earth banked ditch within a strip of woodland along the railway embankment. North bank is flat, south bank is steep. Dominated by tress on banks and within the ditch. Rare abundance of tall herb and grass on northern bank.	Rare abundance of tall herb and grass in areas, but mostly bare earthed banks overshadowed by woodland, which is likely to represent a poor food source.	Unsuitable – wooded ditch with a poor vegetation structure which is unlikely to support water vole.
	S03	09/11/2022	Shallow <45°, Earth	2 - 5m	N/A - Dry	Ditch	Dry earth walled ditch within a strip of woodland along the railway embankment. Shallow banks, with frequent trees and bushes. Occasional tall	Occasional distribution of tall herb and a rare distribution of grass is likely to represent a poor food source for water vole.	Unsuitable – dry ditch with a poor vegetation structure which is unlikely to

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							herbs also present with common nettle and a rare distribution of grass species.		support water vole.
WV21	S01	07/09/2022	Steep >45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry steep earth walled ditch, rare abundance of mature trees scattered along the bank, younger willow trees growing within ditch, ditch vegetation dominated by tall grass and herb, occasional areas of bramble scrub.	Dense tall grass and herb on both banks, herb and young willow scrub within the ditch. Food availability is good due to grass and tall herb.	Unsuitable – dry ditch that is overgrown is trees, scrub and herb vegetation.
	S02	07/09/2022	Steep >45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry steep earth walled ditch, occasional mature trees scattered along the bank, with shaded areas under canopy. Ditch overgrown with abundant tall herb on the banks and within the ditch.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown is trees, scrub and herb vegetation.
	S03	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall herb along the banks and within the ditch. Large stands of Indian balsam within the ditch. Thickets of bramble scrub on both banks in areas.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown is trees, scrub and herb vegetation.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
	S04	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall herb along the banks and within the ditch. Large stands of Indian balsam within the ditch. Thickets of bramble scrub on both banks in areas.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown is trees, scrub and herb vegetation.
	S05	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall herb along the banks and within the ditch. Large stands of Indian balsam within the ditch. Thickets of bramble scrub on both banks in areas.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown is trees, scrub and herb vegetation
	S06	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall grass and herb on the banks and within the ditch.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown is scrub and herb vegetation.
	S07	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall grass and herb on the banks and within the ditch. Some wetland vegetation with sedges and bulrush present.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown with scrub and tall herb vegetation.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
	S08	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall grass and herb on the banks and within the ditch. The eastern bank is lined with young willow trees along the A46, sections overgrown with bramble scrub. Some wetland vegetation with sedges and bulrush present.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown with trees, scrub and tall herb vegetation.
	S09	07/09/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry earth walled ditch, ditch vegetation dominated by tall grass and herb on the banks and within the ditch. The eastern bank is lined with young willow trees along the A46, sections overgrown with bramble scrub. Some wetland vegetation with sedges and bulrush present.	Dense tall herb which is likely to represent a good food source.	Unsuitable – dry ditch that is overgrown with trees, scrub and tall herb vegetation.
WV22	S01	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Earth banked channel with a steep bank on the western bank and a shallow bank on the eastern bank. Ditch predominantly dry, with some areas of shallow water (<5cm at	Tall herb vegetation within the channel but bankside vegetation comprised of mostly trees and scrub, likely to represent a moderate food	Unsuitable – dry ditch with bankside vegetation consisting of trees and scrub.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							deepest). Abundant tall herb within the channel, with Indian balsam and occasional tall grasses. Hazel dominating the west bank, with occasional willow trees. Brambles, willowherb and nettle dominate the east bank. Narrow strip of vegetation between ditch and gravel/stone access track, receives drainage from A46 highways embankment (<25m west from ditch).	source.	
	S02	06/09/2022	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Earth banked channel with a steep bank on the western bank and a shallow bank on the eastern bank. Ditch predominantly dry, with some areas of shallow water (<5cm at deepest). Abundant tall herb within the channel, with Indian balsam and occasional tall grasses. Hazel <i>Corylus avellana</i> dominating the west bank, with occasional willow trees. Brambles,	Tall herb vegetation within the channel but bankside vegetation comprised of mostly trees and scrub, likely to represent a moderate food source.	Unsuitable – dry ditch with bankside vegetation consisting of trees and scrub.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							willowherb and nettle dominate the east bank. Narrow strip of vegetation between ditch and gravel/stone access track, receives drainage from A46 highways embankment (<25m west from ditch).		
WV23	S01	06/09/2022	Flat <10°, Earth	Up to 1m	N/A - Dry	Ditch	Dry ditch earth banked ditch with flat banks. Ditch overgrown with vegetation. Mature ash and other scattered trees present along the west bank. Common hogweed <i>Heracleum sphondylium</i> , nettles and thistle dominate the east bank.	Tall herb vegetation along the eastern bank of the ditch, likely to represent a moderate food source.	Unsuitable – dry ditch with no previous indications of holding water. Banks also flat and suitable for burrowing.
WV24	S01	15/06/2022	Shallow <45°, Reinforced (man-made)	1 - 2m	N/A - Dry	Ditch	Concrete lined ditch adjacent to the highway. Overgrown with frequent trees and scrub, occasional herb and a rare distribution of grass species.	Bank vegetation predominately trees and scrub, with a low occurrence of herb and grass vegetation, which is likely to represent a poor food source.	Unsuitable – concrete lined ditch overgrown with trees and scrub.
	S02	15/06/2022	Shallow <45°, Reinforced (man-	1 - 2m	N/A - Dry	Ditch	Concrete lined ditch adjacent to the highway. Overgrown with frequent trees and scrub,	Bank vegetation predominately trees and scrub, with a low occurrence of	Unsuitable – concrete lined ditch overgrown

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
			made)				occasional herb and a rare distribution of grass species.	herb and grass vegetation, which is likely to represent a poor food source.	with trees and scrub.
	S03	1.5/06/2022	Shallow <45°, Earth	1 - 2m	N/A - Dry	Ditch	Dry drainage ditch adjacent to the road with shallow earth banks. Hedge on the northern bank. Southern bank is bare earth. Frequent herb and a rare distribution of grass species within the ditch.	Frequent herb and a rare distribution of grass species within the ditch. Bankside vegetation of a poor structure with bare earth and a hedgerow. Likely to be a poor food source for water vole.	Unsuitable – dry drainage ditch adjacent to a road, with a vegetation structure that is unlikely to offer a good food source for water vole.
WV25	S01	15/06/2022	Shallow <45°, Reinforced (man-made)	Up to 1m	N/A – Dry	Ditch	Shallow banked drainage ditch adjacent to the highway. Sections of the ditch are concrete lined and other sections are earth banked and have vegetative cover. Vegetation consisting of frequent tall grasses, occasional herb and scrub.	Areas of the ditch are concrete lined and lack vegetation. Frequent grass species and occasional herb vegetation within areas of the ditch that are earth banked. Likely to represent a poor food source for water vole.	Unsuitable – dry concrete lined drainage ditch adjacent to the highway. Vegetation structure unlikely to offer a good food availability for water vole.
WV26	S01	27/05/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Culverted drainage ditch which lies adjacent to the road. Water present is highly turbid and	Abundance of tall herb vegetation is likely to provide a good food source	Unsuitable – due to poor water quality and high

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							polluted with high levels of litter present. No submerged vegetation is present. Bankside vegetation is characterised by abundant tall herb vegetation with frequent trees and tall grassy sward.	for water vole.	levels of disturbance.
WV27	S01	27/05/2022	Flat <10°, Earth	Up to 1m	N/A - Dry	Ditch	Shallow dry ditch that lies adjacent to a road within an enclosed lorry park. No submerged vegetation is present. Bank and channel vegetation is characterised by dominant short sward grass species.	Short sward grassland offers poor quality vegetation structure and food availability for water vole.	Unsuitable – due to lack of water and poor vegetation structure and food availability.
WV28	S01	27/05/2022	Shallow <45°, Earth	Up to 1m	N/A – Dry	Ditch	Grassy dry earth walled ditch adjacent to small farm track. Eastern bank vegetation is dominated by a hedgerow. Western bank vegetation is unmanaged with an abundant cover of tall grass. As the ditch runs to the east, the eastern	Abundant unmanaged tall grass land with frequent herb vegetation. Likely to be a good food source for water vole.	Unsuitable – dry isolated ditch with no previous indications of holding water. Eastern section of the channel has vertical banks

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							section is less than half a meter wide and has vertical banks.		that are unsuitable for burrowing.
WV29	S01	N/A – Habitat no longer exists	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	S02	15/06/2022	Shallow <45°, Earth	2 - 5m	N/A - Dry	Ditch	Small shallow earth banked drainage ditch in an area of amenity grassland. North bank is dominated by a hedgerow, frequent tall grasses and occasional herbs. South bank vegetation is comprised of frequent short grass, occasional herbs are also present within the ditch.	Tall herb and grass species vegetation is likely to offer a moderate food source.	Unsuitable – dry ditch with no indications of having previously held water.
WV32	S01	15/06/2022	Steep >45°, Earth	2 - 5m	N/A - Dry	Ditch	Dry earth banked drainage ditch. North and south banks dominated with herb and tall grass. Ditch channel with frequent reed vegetation. Surrounding land use on both sides arable.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – channel dry at the point of survey, but wetland vegetation indicates to the channel regularly holding water. The banks of the channel are suitable

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
									for burrowing and the vegetation structure is likely to provide a good food source.
	S02	15/06/2022	Steep >45°, Earth	2 - 5m	N/A - Dry	Ditch	Dry earth banked drainage ditch. North and south banks dominated with herb and tall grass. Ditch channel with frequent reed vegetation. Surrounding land use on both sides arable.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – channel dry at the point of survey, but wetland vegetation indicates to the channel regularly holding water. The banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S03	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep earth banked agricultural wet drainage ditch. Banks dominated	Bank vegetation dominated by tall herb and grass	Suitable – the banks of the channel are

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							with tall grass and herb vegetation. Water covered completely by duckweed. Channel vegetation with abundant reed vegetation. Surrounding land use is arable.	species, also reed present within the channel. Likely to represent a good food source for water vole.	suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S04	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep earth banked agricultural wet drainage ditch. Banks dominated with tall grass and herb vegetation. Water covered completely by duckweed. Channel vegetation with abundant reed vegetation. Surrounding land use is arable.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
WV33	S01	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep banked agricultural wet drainage ditch, banks dominated with abundant tall grass and herbs. Surrounding land use is arable. Reed vegetation present within the ditch.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
WV34	S01	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep banked agricultural wet drainage	Bank vegetation dominated by tall	Suitable – the banks of the

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							ditch, banks dominated with abundant tall grass and herbs. Reeds present within the ditch. Surrounding land use is arable.	herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S02	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep banked agricultural wet drainage ditch, banks dominated with abundant tall grass and herbs. Reeds present within the ditch. Surrounding land use is arable.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S03	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Steep banked agricultural wet drainage ditch, banks dominated with abundant tall grass and herbs. Reeds present within the ditch. Surrounding land use is arable.	Bank vegetation dominated by tall herb and grass species, also reed present within the channel. Likely to represent a good food source for water vole.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
	S04	15/06/2022	Steep >45°, Earth	2 - 5m	<0.5m	Ditch	Wet steep earth banked drainage ditch. Banks dominated with tall grass and occasional herb vegetation. Occasional sedge and reed vegetation within the ditch. Surrounding land use on north side is arable and south side is unmanaged grassland.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Also reeds and sedges within the ditch. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
WV35	S01	Access refused	NA	NA	NA	NA	NA	NA	NA
	S02	Access refused	NA	NA	NA	NA	NA	NA	NA
	S03	Access refused	NA	NA	NA	NA	NA	NA	NA
	S04	Access refused	NA	NA	NA	NA	NA	NA	NA
	S05	Access refused	NA	NA	NA	NA	NA	NA	NA
	S06	Access refused	NA	NA	NA	NA	NA	NA	NA
	S07	Access refused	NA	NA	NA	NA	NA	NA	NA
	S08	Access refused	NA	NA	NA	NA	NA	NA	NA
	S09	Access refused	NA	NA	NA	NA	NA	NA	NA
	S10	15/05/2023	Shallow <45°, Earth	Up to 1m	N/A – Dry	Ditch	Dry shallow earth walled drainage ditch heavily	Tall herb in sections may offer some food	Unsuitable – dry shaded

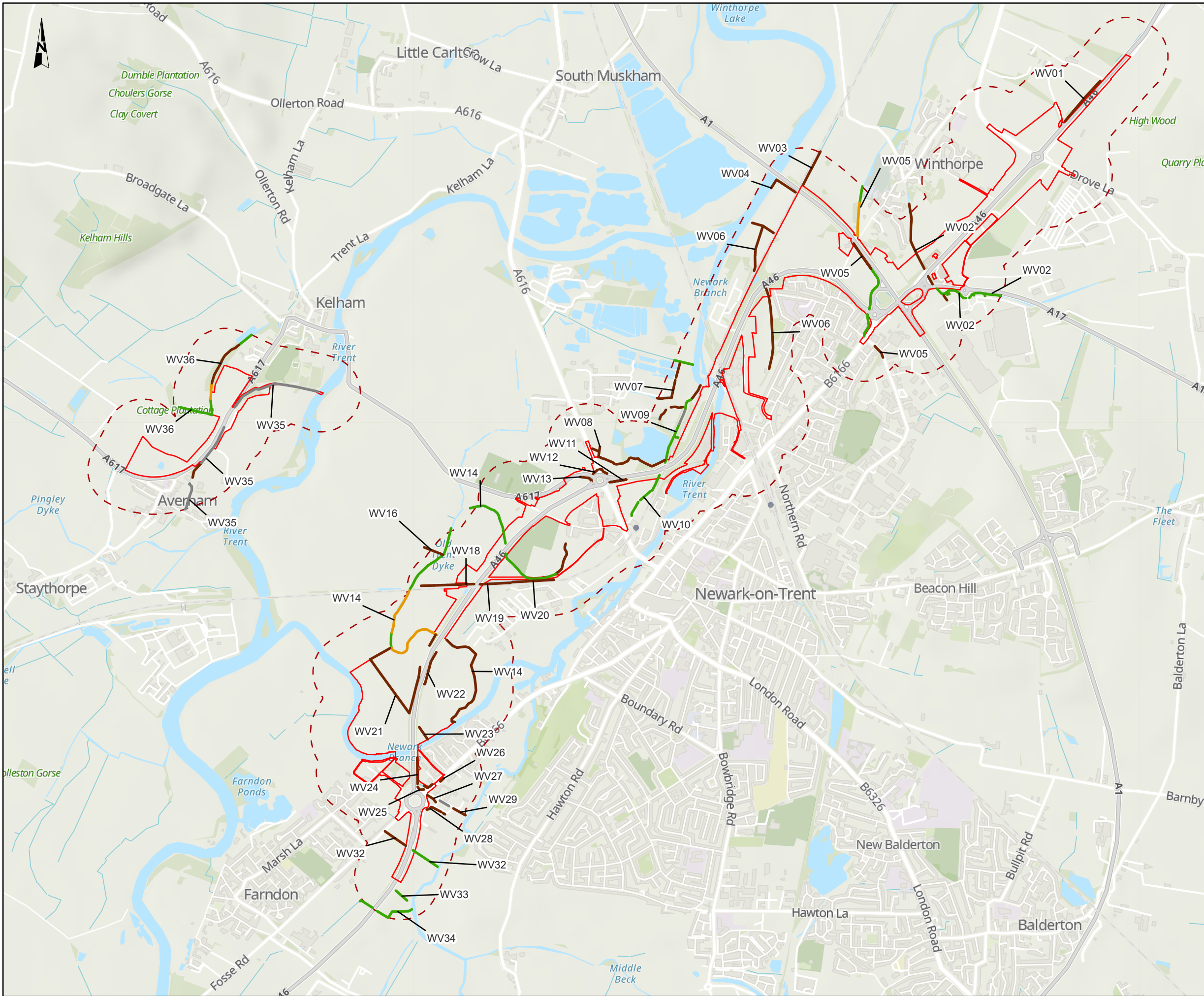
Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							shaded by woodland. Tall herb vegetation on bank tops in areas that are unshaded by overhead trees. Ground slightly soft underfoot, but shows no indication of regularly holding water with no aquatic or marginal vegetation present.	availability to water vole. Sections of bare bank were ditch is shaded by overhead trees.	ditch with no indications of regularly holding water, with no aquatic or marginal vegetation present.
	S11	20/04/2023	Shallow <45°, Earth	Up to 1m	N/A – Dry	Ditch	Dry shallow earth walled drainage ditch heavily shaded by woodland. Tall herb vegetation on bank tops in areas that are unshaded by overhead trees. Ground slightly soft underfoot, but shows no indication of regularly holding water with no aquatic or marginal vegetation present.	Tall herb in sections may offer some food availability to water vole. Sections of bare bank were ditch is shaded by overhead trees.	Unsuitable – dry shaded ditch with no indications of regularly holding water, with no aquatic or marginal vegetation present.
	S12	20/04/2023	Shallow <45°, Earth	Up to 1m	N/A – Dry	Ditch	Dry shallow earth walled drainage ditch heavily shaded by woodland. Tall herb vegetation on bank tops in areas that are unshaded by overhead trees. Ground slightly soft underfoot,	Tall herb in sections may offer some food availability to water vole. Sections of bare bank were ditch is shaded by overhead trees.	Unsuitable – dry shaded ditch with no indications of regularly holding water, with no aquatic or

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							but shows no indication of regularly holding water with no aquatic or marginal vegetation present.		marginal vegetation present.
WV36	S01	20/04/2023	Shallow <45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S02	20/04/2023	Shallow <45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S03	20/04/2023	Shallow <45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas	Bank vegetation structure with dominate tall grass and occasional herb vegetation.	Suitable – the banks of the channel are suitable for burrowing and

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							shaded by overhead trees with sections of bare earth.	Vegetation structure likely to represent a good food source.	the vegetation structure is likely to provide a good food source.
	S04	20/04/2023	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S05	16/05/2023	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S06	16/05/2023	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the	Bank vegetation structure with dominate tall grass and occasional herb	Suitable – the banks of the channel are suitable for

Transect ID	Subsection	Habitat Assessment Date	Bank Profile and Substrate	Estimated Width	Estimated Depth	Waterbody Type	Habitat Description	Vegetation Structure and food availability	Habitat Suitability for water vole
							banks, some areas shaded by overhead trees with sections of bare earth.	vegetation. Vegetation structure likely to represent a good food source.	burrowing and the vegetation structure is likely to provide a good food source.
	S07	16/05/2023	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.
	S08	16/05/2023	Steep >45°, Earth	Up to 1m	<0.5m	Ditch	Wet drainage ditch with earth banks. Tall herb and grass vegetation dominates most of the banks, some areas shaded by overhead trees with sections of bare earth.	Bank vegetation structure with dominate tall grass and occasional herb vegetation. Vegetation structure likely to represent a good food source.	Suitable – the banks of the channel are suitable for burrowing and the vegetation structure is likely to provide a good food source.

C. Appendix: Water vole habitat suitability



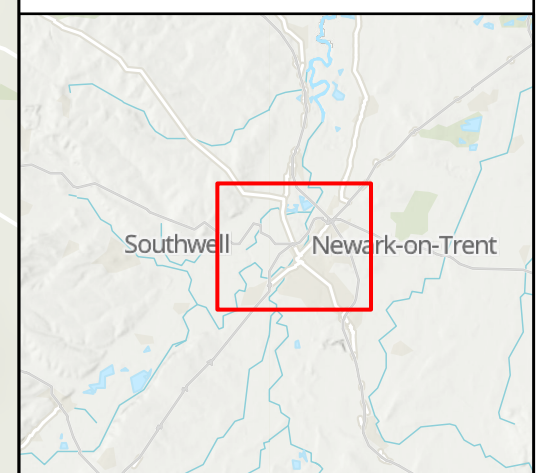
NOTES
 Source
 Ecology data collected by Mott MacDonald, 2022-2023.
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KEY TO SYMBOLS

- Order Limits
- Order Limits 250m buffer

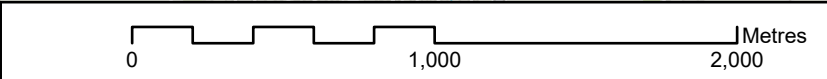
Water vole habitat suitability

- Suitable
- Low suitability
- Unsuitable
- Not yet surveyed

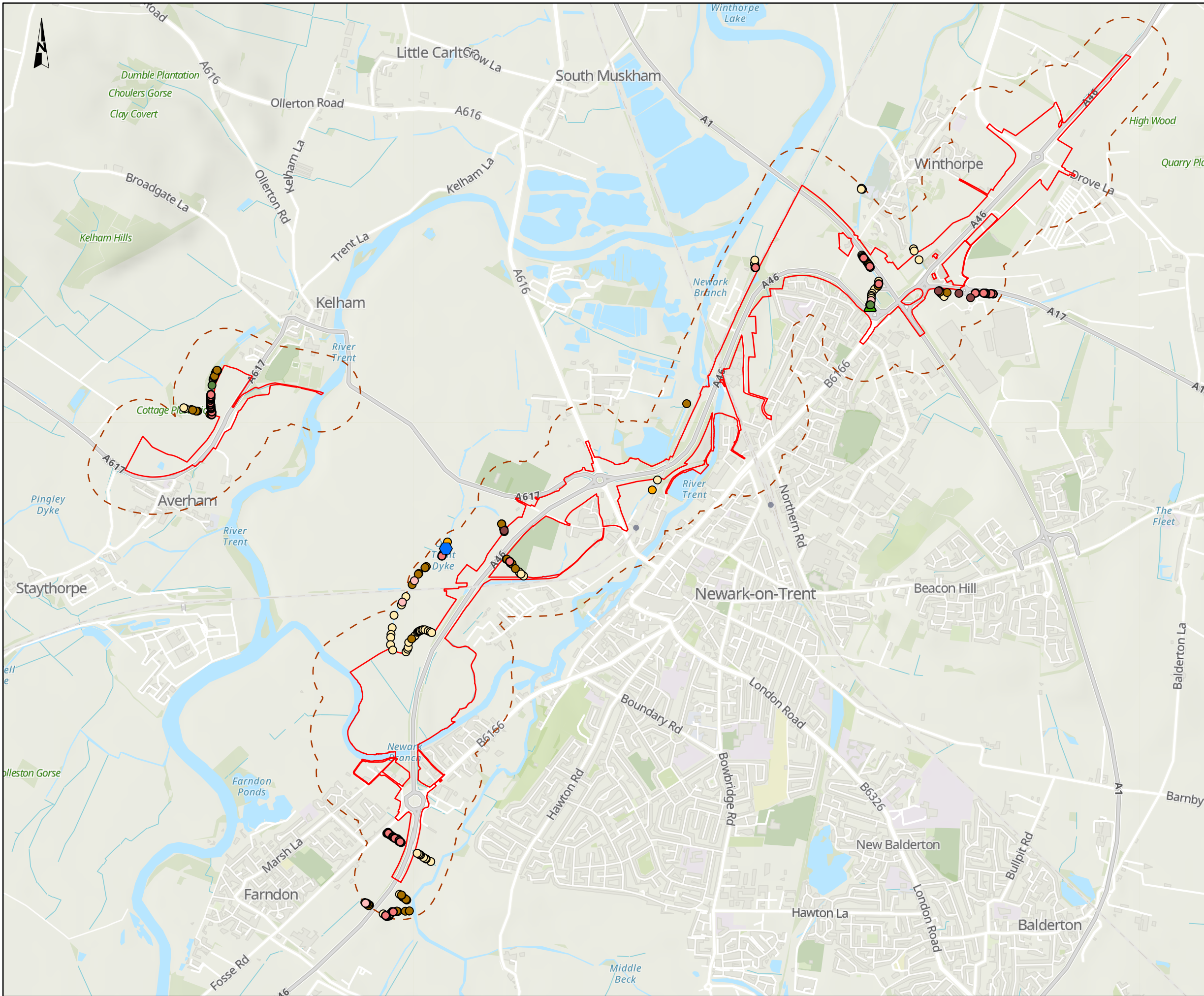


C01	08/12/23	DCO APPLICATION	JB	BC	HF
REV.	DATE	AMENDMENT DETAILS	ORIG	CHKD	APPD
CLIENT					
PURPOSE OF ISSUE					
DCO APPLICATION					
DEVELOPMENT CONSENT ORDER NUMBER					
TR010065					
PROJECT TITLE					
A46 NEWARK BYPASS					
DRAWING TITLE					
Appendix C Water Vole Habitat Suitability					
ORIGINAL SIZE		SCALE			
A3		1:25,000			
DRAWING NUMBER		ORIGINATOR		VOLUME	
HE551478		SKAG		EBD	
CONWI_CONW		DR LE		00115	
LOCATION		TYPE		NUMBER	
PROJECT REF NO.					HE551478
REVISION					C01

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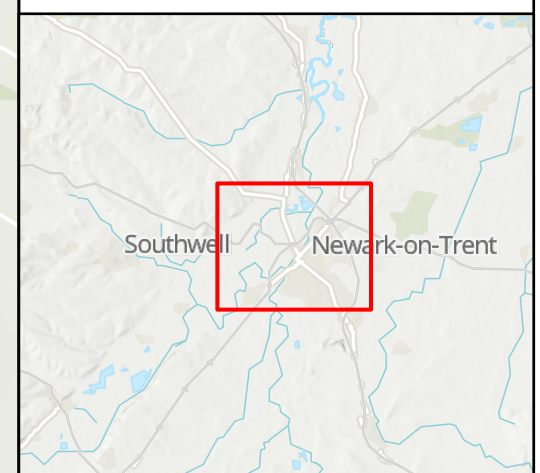


D. Appendix: Water vole survey results



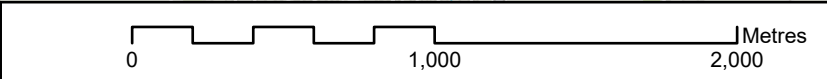
NOTES
 Source
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- KEY TO SYMBOLS**
- Order Limits
 - Order Limits 250m buffer
- Field sign**
- ▲ Mink, tracks / footprints
 - Small mammal, burrow
 - Small mammal, faeces
 - Small mammal, feeding remains
 - Small mammal, footprint
 - Small mammal, latrine
 - Small mammal, run
 - Small mammal, other field sign
 - ◆ Water Vole, faeces



C01	08/12/23	DCO APPLICATION	JB	BC	HF
REV.	DATE	AMENDMENT DETAILS	ORIG	CHKD	APPD
CLIENT					
PURPOSE OF ISSUE					
DCO APPLICATION					
DEVELOPMENT CONSENT ORDER NUMBER					
TR010065					
PROJECT TITLE					
A46 NEWARK BYPASS					
DRAWING TITLE					
Appendix D Water Vole Survey Results					
ORIGINAL SIZE		SCALE			
A3		1:25,000			
DRAWING NUMBER		ORIGINATOR	VOLUME	PROJECT REF NO.	
HE551478		SKAG	EBD	HE551478	
LOCATION		DR	LE	00114	REVISION
CONWI_CONW		DR	LE	00114	C01

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E. Appendix: Summary of water vole field signs

Table E-1: Summary of water vole field signs for presence/likely absence 2022 surveys

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV02	S04	1	24/05/2022	Burrow	Small mammal burrow	481464	356210	Unknown mammal species	156
WV02	S04	1	24/05/2022	Burrow	Small mammal burrow	481468	356195	Unknown mammal species	157
WV02	S05	1	24/05/2022	Burrow	Small mammal burrow	481501	356136	Unknown mammal species	158
WV02	S07	1	14/07/2022	Run	Mammal run	481631	355926	Unknown mammal species	159
WV02	S07	1	14/07/2022	Burrow	Small mammal burrow	481637	355929	Unknown mammal species	160
WV02	S07	1	14/07/2022	Burrow	Small mammal burrow	481646	355914	Unknown mammal species	161
WV02	S07	1	14/07/2022	Burrow	Small mammal burrow	481648	355912	Unknown mammal species	162
WV02	S08	1	14/07/2022	Feeding remains	Feeding station	481689	355916	Unknown mammal species	163

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV02	S09	1	14/07/2022	Run	Mammal run	481769	355910	Unknown mammal species	164
WV02	S11	1	14/07/2022	Run	Mammal run	481847	355881	Unknown mammal species	165
WV05	S01	1	06/09/2022	Burrow	Small mammal burrow	481121	356609	Unknown mammal species	166
WV09	S02	1	08/09/2022	Feeding remains	Feeding remains	479940	355170	Unknown mammal species	167
WV10	S01	1	25/05/2022	Burrow	Small mammal burrow	479744	354657	Unknown mammal species	168
WV10	S02	1	25/05/2022	Droppings	Small mammal droppings	479709	354590	Unknown mammal species	169
WV14	S07	1	25/05/2022	Feeding remains	Feeding remains	478715	354310	Unknown mammal species	170
WV14	S07	1	25/05/2022	Run	Mammal run	478715	354318	Unknown mammal species	171
WV14	S07	1	25/05/2022	Feeding remains	Feeding remains	478714	354322	Unknown mammal species	172
WV14	S07	1	25/05/2022	Feeding remains	Feeding remains	478712	354325	Unknown mammal species	173

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV14	S07	1	25/05/2022	Feeding remains	Feeding remains	478711	354328	Unknown mammal species	174
WV14	S08	1	25/05/2022	Droppings	Likely mink	478698	354362	Unknown mammal species	175
WV14	S08	1	25/05/2022	Droppings	Old droppings	478697	354363	Unknown mammal species	176
WV14	S08	2	07/09/2022	Feeding remains	Feeding remains	478697	354362	Unknown mammal species	177
WV14	S11	2	07/09/2022	Feeding remains	Feeding remains	478443	354462	Unknown mammal species	178
WV14	S12	1	26/05/2022	Feeding remains	Old feeding station	478359	354348	Unknown mammal species	179
WV14	S13	1	26/05/2022	Feeding remains	Old feeding station	478353	354320	Unknown mammal species	180
WV14	S13	1	26/05/2022	Droppings	Two droppings	478334	354241	Rat	181
WV14	S14	2	07/09/2022	Droppings	Three dropping	478323	354197	Water vole	182
WV14	S14	2	07/09/2022	Footprint	Footprints in mud, likely rat	478322	354194	Unknown mammal species	183

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV14	S14	2	07/09/2022	Latrine	Old droppings – potential latrine	478296	354147	Unknown mammal species	184
WV14	S14	2	07/09/2022	Droppings	Old dropping in mud	478299	354152	Unknown mammal species	185
WV14	S16	1	26/05/2022	Feeding remains	Feeding station	478191	354076	Unknown mammal species	186
WV14	S16	1	26/05/2022	Feeding remains	Feeding station	478183	354067	Unknown mammal species	187
WV14	S16	1	26/05/2022	Feeding remains	Feeding station	478183	354070	Unknown mammal species	188
WV14	S16	1	26/05/2022	Feeding remains	Feeding station	478142	354030	Unknown mammal species	189
WV14	S16	1	26/05/2022	Feeding remains	Feeding station	478137	354025	Unknown mammal species	190
WV14	S17	1	26/05/2022	Feeding remains	Feeding station	478096	353955	Unknown mammal species	191
WV14	S17	2	07/09/2022	Footprint	Footprints in mud, likely rat	478112	353981	Unknown mammal species	192
WV16	S02	2	07/09/2022	Footprint	Footprint in mud, likely rat	478301	354157	Unknown mammal species	193

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV16	S02	2	07/09/2022	Droppings	Very old dropping, likely rat	478302	354160	Unknown mammal species	194
WV34	S04	2	09/08/2022	Footprint	Water vole shaped tracks	477767	351822	Unknown mammal species	195
WV34	S04	2	09/08/2022	Footprint	Footprints in mud, likely rat	477783	351815	Unknown mammal species	196

Source: Mott MacDonald, 2022

Table E-2: Summary of water vole field signs for presence/likely absence 2023 surveys

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV05	S04	2	04/05/2023	Burrow	Small mammal burrow	481117	356170	Likely field vole	199
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow	481121	356162	Likely field vole	200
WV05	S05	2	04/05/2023	Two burrows	Small mammal burrows	481125	356155	Likely field vole	NA
WV05	S05	2	04/05/2023	Two burrows	Small mammal burrow	481128	356153	Likely field vole	201

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV05	S05	2	04/05/2023	Feeding remains	Yorkshire fog, 2-3cm	481129	356151	Likely field vole	202
WV05	S05	2	04/05/2023	Latrine and feeding remains	Yorkshire fog, 2-6cm	481129	356150	Likely field vole	203
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow, 4cm wide	481134	356144	Likely field vole	NA
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow, <4cm wide	481135	356143	Likely field vole	204
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481141	356137	Likely field vole	NA
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481152	356121	Likely field vole	NA
WV05	S05	2	04/05/2023	Burrow	Small mammal burrow, <4cm wide	481158	356115	Likely field vole	NA
WV05	S05	2	04/05/2023	Feeding remains	Soft grasses up to 4cm long	481160	356110	Likely field vole	NA
WV05	S05	2	04/05/2023	Burrow and feeding remains	Small mammal burrow, 2cm wide with feeding remains	481174	356087	Likely water vole	205
WV05	S05	2	04/05/2023	Latrine and feeding station	Small mammal	481170	356094	Likely field vole	206
WV05	S05	2	04/05/2023	Feeding remains	Three x feeding stations, cranesbill and soft grasses	481167	356104	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV05	S05	2	04/05/2023	Burrow, feeding station and latrine	Three x burrows <2cm wide, feeding station and latrine	481164	356105	Likely field vole	NA
WV05	S06	2	04/05/2023	Burrows	Two x burrows <2cm wide	481230	355994	Likely field vole	NA
WV05	S07	2	04/05/2023	Latrine and feeding station	Feeding station and latrine	481230	355977	Likely field vole	207
WV05	S07	2	04/05/2023	Feeding remains	NA	481226	355963	Likely field vole	NA
WV05	S07	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481222	355959	Likely field vole	NA
WV05	S07	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481220	355956	Likely field vole	NA
WV05	S07	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481203	355940	Likely field vole	208
WV05	S07	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481203	355940	Likely field vole	NA
WV05	S08	2	04/05/2023	Burrow	Small mammal burrow	481181	355899	Likely brown rat	209
WV05	S08	2	04/05/2023	Burrow	NA	481180	355891	Unknown mammal species	NA
WV05	S08	2	04/05/2023	Burrow	Small mammal burrow, suspected rat burrow	481181	355879	Likely rat	210

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV05	S08	2	04/05/2023	Footprints	Unknown species	481180	355865	Likely rat	211
WV05	S08	2	04/05/2023	Burrow	Small mammal burrow <4cm wide	481172	355840	Likely field vole	212
WV05	S08	2	04/05/2023	Burrow	Small mammal burrow, 2cm wide	481176	355837	Likely field vole	NA
WV05	S08	2	04/05/2023	Footprints	NA	481180	355865	Likely brown rat	213
WV05	S08	2	04/05/2023	Footprints	Faint footprint	481173	355825	Mink	214
WV06	S05	2	05/05/2023	Burrow	Small mammal burrow, 2cm wide, near water level	480401	356091	Likely field vole	215
WV06	S05	2	05/05/2023	Burrow	Small mammal burrow	480397	356106	Unknown mammal species	216
WV06	S05	2	05/05/2023	Two burrows	Two small mammal burrows, 2cm wide	480398	356110	Likely field vole	217
WV06	S05	2	05/05/2023	Latrine	Cluster of droppings on bank top	480403	356086	Field vole	218
WV06	S05	2	05/05/2023	Burrow	Small mammal burrows <4cm wide, near water level, likely field vole based on nearby droppings	480399	356086	Likely field vole	219

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV06	S05	2	05/05/2023	Burrows	Three small mammal burrows <2cm wide, near water's edge	480397	356115	Likely field vole	NA
WV06	S05	2	05/05/2023	Burrow	<4cm wide, near water's edge	480398	356136	Likely field vole	220
WV14	S06	2	05/05/2023	Feeding remains	Horse tail, flat ends, up to 10cm	478728	354127	Unknown mammal species	221
WV14	S06	2	05/05/2023	Feeding remains	Small pieces of soft grasses, up to 3cm, on bank	478733	354128	Unknown mammal species	222
WV14	S06	2	05/05/2023	Burrow	Narrows to 2cm wide	478746	354116	Likely field vole	223
WV14	S06	2	05/05/2023	Latrine and two burrows	Latrine and two burrows, one likely to floor, other further up bank	478752	354112	Likely field vole	224
WV14	S06	2	05/05/2023	Feeding remains	Short lengths of grasses, 2cm	478755	354104	Unknown mammal species	NA
WV14	S06	2	05/05/2023	Burrow	Shallow but wide burrow, 10-15cm wide, 5cm high	478758	354100	Likely brown rat	225
WV14	S06	2	05/05/2023	Feeding remains	Short lengths of soft grasses up to 4cm	478767	354098	Unknown mammal species	226
WV14	S06	2	05/05/2023	Burrow	Near to water's edge but only 2cm wide	478768	354093	Likely field vole	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV14	S05	2	05/05/2023	Feeding remains	Short lengths of soft grasses, 2cm	478790	354065	Unknown mammal species	227
WV14	S05	2	05/05/2023	Burrow	Small mammal burrow, 8cm wide with spoil heap	478824	354030	Brown rat	228
WV14	S05	2	05/05/2023	Burrow	Small mammal burrow, >10cm wide but shallow	478823	354031	Brown rat	229
WV14	S05	2	05/05/2023	Burrow	Small mammal burrow, 5-8cm wide, large spoil heap	478814	354043	Brown rat	230
WV14	S05	2	05/05/2023	Burrow	Small mammal burrow, 2cm wide, near water's edge	478845	354015	Likely field vole	231
WV14	S05	2	05/05/2023	Burrow	Small mammal burrow, 5-8cm wide	478828	354029	Likely brown rat	232
WV02	S07	2	09/05/2023	Burrow	Small mammal burrow	481635	355931	Likely brown rat	233
WV02	S07	2	09/05/2023	Feeding remains	Gnawed piece of nettle	481641	355921	Unknown mammal species	NA
WV02	S07	2	09/05/2023	Burrow	Small mammal burrow, 10cm wide	481643	355917	Likely brown rat	234
WV02	S07	2	09/05/2023	Burrow	Small mammal burrow	481652	355919	Brown rat or rabbit	235

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV02	S07	2	09/05/2023	Burrow	Rabbit burrow and other rabbit evidence	481651	355909	Rabbit	236
WV02	S07	2	09/05/2023	Burrow and digging	Burrow, 10cm wide and digging	481656	355906	Likely rabbit or rat	237
WV02	S13	2	09/05/2023	Latrine, feeding station and burrow	Droppings, feeding station and burrow 2cm wide	481999	355909	Field vole	238
WV02	S13	2	09/05/2023	Larine and feeding station	Large droppings, horse tail and soft grasses up to 10cm	481985	355911	Unknown mammal species	239
WV02	S13	2	09/05/2023	Burrow and feeding station	Small mammal burrow less than 4cm, soft grasses up to 4cm	481989	355911	Unknown mammal species	240
WV02	S13	2	09/05/2023	Feeding station	Two feeding stations, soft grass up to 10cm	481973	355907	Unknown mammal species	241
WV02	S13	2	09/05/2023	Feeding station	Historic feeding station, soft grasses up to 5cm	481961	355909	Unknown mammal species	NA
WV02	S12	2	09/05/2023	Feeding station	Soft grasses up to 6cm	481956	355913	Unknown mammal species	242
WV02	S12	2	09/05/2023	Latrine and feeding station	Field vole droppings and several feeding stations with soft	481949	355914	Field vole	243

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					grasses				
WV02	S12	2	09/05/2023	Latrine and feeding station	Field vole droppings near to water's edge	481945	355912	Field vole	244
WV02	S12	2	09/05/2023	Burrow and feeding station	Small mammal burrow, 2cm wide	481942	355913	Field vole	245
WV02	S12	2	09/05/2023	Latrine and feeding station	Several droppings and feeding stations with short, soft grasses	481935	355915	Field vole	246
WV02	S11	2	09/05/2023	Feeding station	Soft grasses up to 4cm	481883	355916	Unknown mammal species	247
WV02	S11	2	09/05/2023	Latrine and feeding station	Droppings and feed station	481879	355914	Field vole	248
WV02	S10	2	09/05/2023	Burrow	Small mammal burrow, >10cm wide	481670	355891	Likely rabbit	249
WV02	S10	2	09/05/2023	Burrow	Small mammal burrow	481675	355888	Rabbit	250
WV02	S10	2	09/05/2023	Burrow	Small mammal burrow	481687	355868	Rabbit	251
WV02	S10	2	09/05/2023	Burrow	Small mammal burrow	481685	355870	Rabbit	252
WV05	S01	2	10/05/2023	Burrow	Small mammal burrow, narrows to 2cm	481117	356632	Unknown mammal species	253

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV05	S01	2	10/05/2023	Burrow	Small mammal burrow, 2cm wide	481115	356619	Field vole	254
WV05	S01	2	10/05/2023	Burrow	Small mammal burrow, 2cm wide	481113	356612	Field vole	NA
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses, 10cm long, on water's edge	477926	352286	Unknown mammal species	255
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses up to 4cm long	477934	352294	Unknown mammal species	NA
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses up to 5cm at water's edge	477933	352286	Unknown mammal species	256
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses up to 5cm	477934	352285	Unknown mammal species	257
WV32	S01	2	10/05/2023	Latrine and feeding remains	Droppings and two feeding stations with grasses up to 10cm	477937	352290	Field vole	258
WV32	S01	2	10/05/2023	Feeding remains	Gnawn grass near water's edge	477936	352285	Unknown mammal species	259
WV32	S01	2	10/05/2023	Latrine and feeding station	Droppings and soft grasses up to 5cm	477937	352284	Field vole	260
WV32	S01	2	10/05/2023	Latrine and feeding remains	Droppings and soft grasses	477937	352287	Field vole	261

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV32	S01	2	10/05/2023	Feeding station	Three feeding stations of soft grasses, 5cm	477943	352279	Unknown mammal species	262
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses up to 10cm at water's edge	477944	352278	Unknown mammal species	263
WV32	S01	2	10/05/2023	Feeding remains	Soft grasses up to 10cm	477945	352281	Unknown mammal species	NA
WV32	S01	2	10/05/2023	Feeding stations	Two feeding stations, grasses up to 5cm	477947	352276	Unknown mammal species	264
WV32	S01	2	10/05/2023	Feeding station	Soft grasses up to 5cm near water's edge	477952	352273	Unknown mammal species	NA
WV32	S01	2	10/05/2023	Feeding station	Two feeding stations with soft grasses up to 5cm	477957	352271	Unknown mammal species	NA
WV32	S01	2	10/05/2023	Feeding station	10 feeding stations at toe of bank, grass length 5-10cm	477965	352265	Field vole	NA
WV32	S01	2	10/05/2023	Latrine and feeding remains	Droppings and feeding remains	477967	352263	Field vole	265
WV32	S01	2	10/05/2023	Latrine and feeding remains	Droppings and feeding remains	477970	352261	Field vole	266
WV32	S01	2	10/05/2023	Feeding remains	Grass up to 5-10cm	477972	352259	Field vole	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV32	S01	2	10/05/2023	Latrine and feeding remains	>10 feeding stations along both banks, grass length 5cm	477978	352256	Field vole	NA
WV32	S01	2	10/05/2023	Latrine and feeding stations	Droppings and feeding stations	477980	352254	Field vole	267
WV32	S02	2	10/05/2023	Feeding stations	Found consistently along both banks, grass 5-10cm	477996	352251	Field vole	NA
WV32	S02	2	10/05/2023	Feeding stations	Feeding stations with grass up to 10cm	477999	352250	Unknown mammal species	NA
WV32	S02	2	10/05/2023	Feeding station	Grass up to 5cm	478002	352245	Unknown mammal species	NA
WV32	S02	2	10/05/2023	Feeding stations	Grass up to 10cm	478005	352243	Unknown mammal species	NA
WV32	S02	2	10/05/2023	Latrine and feeding station	Droppings on feeding station by water's edge. Grass 10cm.	478009	352239	Field vole	268
WV32	S02	2	10/05/2023	Burrow	Small mammal burrow, 4cm wide, 20cm up bank from water's edge	478006	352233	Unknown mammal species	269
WV32	S02	2	10/05/2023	Feeding station	On top of bank, grass length 5cm	478015	352231	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV32	S02	2	10/05/2023	Latrine and feeding station	Mid water up to bank	478016	352230	Field vole	NA
WV32	S02	2	10/05/2023	Feeding remains	Feeding station near water's edge	478018	352227	Unknown mammal species	NA
WV32	S02	2	10/05/2023	Burrow	Small mammal burrow, 2cm wide, 30cm up the bank	478023	352226	Unknown mammal species	NA
WV32	S02	2	10/05/2023	Burrow	Small mammal burrow, 4cm wide, 20cm above water level	478023	352225	Unknown mammal species	NA
WV33	S01	2	11/05/2023	Feeding remains	Soft grasses up to 3cm, near water's edge	478060	351839	Unknown mammal species	270
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide, near water's edge	478047	351849	Unknown mammal species	271
WV33	S01	2	11/05/2023	Feeding remains	Soft grasses up to 5cm	478055	351844	Unknown mammal species	NA
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide, near water's edge	478034	351858	Unknown mammal species	272
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478031	351861	Unknown mammal species	273
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478032	351862	Unknown mammal species	274

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478025	351869	Unknown mammal species	275
WV33	S01	2	11/05/2023	Feeding remains	Soft grasses up to 5cm	478027	351872	Unknown mammal species	276
WV33	S01	2	11/05/2023	Feeding remains	Soft grasses up to 5cm	478025	351873	Unknown mammal species	NA
WV33	S01	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478012	351878	Unknown mammal species	277
WV32	S04	2	11/05/2023	Burrow	Small mammal burrow, narrows to <4cm	478222	352097	Unknown mammal species	278
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478191	352115	Unknown mammal species	279
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478185	352118	Unknown mammal species	280
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478173	352125	Unknown mammal species	NA
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, narrows to 2cm	478153	352141	Unknown mammal species	281
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, less than 4cm	478146	352144	Unknown mammal species	282

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, less than 4cm	478140	352149	Unknown mammal species	NA
WV32	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide, halfway up the bank	478130	352153	Unknown mammal species	NA
WV34	S03	2	11/05/2023	Feeding remains	Soft grasses up to 5cm	477927	351727	Unknown mammal species	283
WV34	S03	2	11/05/2023	Feeding remains	Soft grasses up to 3cm	477925	351732	Unknown mammal species	284
WV34	S03	2	11/05/2023	Burrow	Small mammal burrow, less than 4cm	477923	351726	Unknown mammal species	285
WV34	S03	2	11/05/2023	Burrow	Large burrow, up to 10cm wide	477922	351732	Likely brown rat	286
WV34	S03	2	11/05/2023	Latrine and feeding station	Droppings and feeding station	477918	351735	Field vole	287
WV34	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	477917	351736	Unknown mammal species	288
WV34	S03	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	477902	351746	Unknown mammal species	289
WV34	S02	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	477942	351731	Unknown mammal species	290

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV34	S02	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	477945	351737	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	477950	351749	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Feeding remains	5cm long grass	477963	351762	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Latrine and feeding station	Droppings and feeding station	477970	351760	Field vole	NA
WV34	S02	2	11/05/2023	Feeding remains	Grass up to 2cm	477979	351760	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Feeding remains	Grass up to 10cm	477981	351760	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Burrow and feeding station	Small mammal burrow, 2cm wide, grass 5cm long along water's edge	477987	351763	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Feeding remains	Feeding station with grass less than 3cm long	477991	351763	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Feeding remains	Grass up to 5cm long along water's edge	477994	351765	Unknown mammal species	NA
WV34	S02	2	11/05/2023	Burrow	Small mammal burrow, 2cm wide	478001	351762	Unknown mammal	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
								species	
WV34	S01	2	11/05/2023	Feeding remains	Grass up to 5cm	478051	351764	Unknown mammal species	NA
WV34	S01	2	11/05/2023	Feeding remains	Grass up to 5cm	478076	351765	Unknown mammal species	NA
WV34	S01	2	11/05/2023	Feeding remains	Grass up to 5cm	478078	351766	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Historic feeding station, grass 5cm long	477811	351805	Unknown mammal species	291
WV34	S04	2	12/05/2023	Feeding remains	Historic feeding station, grass 5cm long	477806	351801	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 10cm	477807	351805	Unknown mammal species	292
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 10cm	477804	351801	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 5cm	477801	351812	Unknown mammal species	293
WV34	S04	2	12/05/2023	Burrow	Small mammal burrow, 4cm wide	477793	351809	Unknown mammal species	294

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV34	S04	2	12/05/2023	Feeding remains	Gnawed grasses up to 15cm	477793	351817	Unknown mammal species	295
WV34	S04	2	12/05/2023	Feeding remains	Three feeding stations, soft grasses up to 5cm, one near water's edge	477790	351817	Unknown mammal species	296
WV34	S04	2	12/05/2023	Feeding remains	Two feeding stations, grasses up to 10cm	477787	351818	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 5cm	477786	351813	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Burrow and feeding station	Small mammal burrow, 2cm wide	477784	351819	Unknown mammal species	297
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 10cm	477783	351819	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 10cm	477781	351820	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 5cm	477779	351819	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 10cm	477779	351822	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV34	S04	2	12/05/2023	Latrine and feeding station	Droppings and feeding station	477775	351824	Field vole	298
WV34	S04	2	12/05/2023	Feeding remains	Two feeding stations, soft grasses up to 5cm	477774	351825	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Three feeding stations, soft grasses up to 5cm	477772	351825	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 5cm	477769	351828	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Soft grasses up to 5cm	477761	351834	Unknown mammal species	NA
WV34	S04	2	12/05/2023	Feeding remains	Three feeding stations, soft grasses up to 5cm	477761	351831	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow, narrows to <4cm	476759	355333	Unknown mammal species	333
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow, 4cm wide	476761	355341	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow, 2cm wide on edge of bank	476767	355349	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	2cm wide on edge of bank	476766	355352	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV36	S04	2	15/05/2023	Burrow	Two burrows <4cm wide on edge of bank	476769	355358	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Feeding station and latrine	Feeding station with nettles and shorter grass, droppings	476769	355357	Bank vole	334
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow, 2cm wide on bank edge	476773	355371	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow <4cm wide on bank edge	476775	355375	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow 2cm wide, on edge of bank	476777	355378	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow <4cm wide, on edge of bank	476776	355382	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow, 2cm wide, on edge of bank	476780	355389	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow <4cm wide on edge of bank	476783	355388	Unknown mammal species	NA
WV36	S04	2	15/05/2023	Burrow	Small mammal burrow <4cm wide on edge of bank	476790	355394	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV36	S04	2	15/05/2023	Feeding remains	Feeding station, no droppings	476786	355397	Bank/field vole	335
WV36	S07	2	16/05/2023	Feeding remains	Soft grass up to 10cm	476745	355100	Unknown mammal species	336
WV36	S07	2	16/05/2023	Feeding remains and latrine	Latrine and feeding station	476749	355097	Field vole	337
WV36	S07	2	16/05/2023	Feeding remains and latrine	Latrine and feeding station	476751	355098	Field vole	338
WV36	S07	2	16/05/2023	Feeding remains	In the water, large reed up to 20cm, 90° angle	476737	355102	Possible rat	339
WV36	S07	2	16/05/2023	Feeding remains	Short lengths of soft grasses, 5cm long, at water's edge/in water	476656	355122	Unknown mammal species	340
WV36	S07	2	16/05/2023	Feeding remains	Soft grasses up to 10cm long, at water's edge	476648	355122	Unknown mammal species	341
WV36	S08	2	16/05/2023	Feeding remains	Soft grasses up to 10cm long, at water's edge	476645	355122	Unknown mammal species	NA
WV36	S08	2	16/05/2023	Burrow	Small mammal burrow, 2cm wide, half way up bank	476627	355128	Unknown mammal species	342
WV36	S08	2	16/05/2023	Feeding remains	Soft grasses up to 5cm long	476622	355129	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV36	S08	2	16/05/2023	Burrow	Small mammal burrow, <4cm wide at water's edge	476614	355133	Unknown mammal species	343
WV36	S08	2	16/05/2023	Burrow	Small mammal burrow, 2cm wide, near water's edge	476574	355139	Unknown mammal species	344
WV36	S08	2	16/05/2023	Burrow	Small mammal burrow	476568	355144	Rabbit	NA
WV36	S08	2	16/05/2023	Burrow	Small mammal burrow, 2cm wide, near water's edge	476562	355144	Unknown mammal species	345
WV36	S06	2	16/05/2023	Feeding remains	Soft grasses up to 2cm long	476751	355111	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Feeding remains	Soft grasses up to 20cm long, at water's edge/in water	476751	355113	Brown rat	346
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and feeding station	476751	355117	Field vole	347
WV36	S06	2	16/05/2023	Feeding remains	Soft grasses up to 5cm long	476750	355117	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Burrow	Small mammal burrow, 2cm wide	476750	355116	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Burrow and feeding station	Small mammal burrow, 2cm wide, feeding station	476748	355126	Unknown mammal species	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					around burrow with grasses surrounding				
WV36	S06	2	16/05/2023	Feeding remains	Near water's edge, 10cm long	476747	355137	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and feeding station up to 10cm	476746	355139	Field vole	348
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and several feeding station grass up to 5-10cm long	476744	355147	Field vole	NA
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and feeding station on raft of vegetation in water	476745	355150	Field vole	349
WV36	S06	2	16/05/2023	Feeding remains	5-10cm long	476745	355161	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and several feeding stations, 5-10cm long	476743	355163	Field vole	NA
WV36	S06	2	16/05/2023	Latrine and feeding station	Two latrines and feeding stations, grass up to 20cm long	476743	355167	Field vole	NA
WV36	S06	2	16/05/2023	Burrow, feeding station and latrine	Small mammal burrow, 2cm wide, several feeding	476743	355172	Field vole	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					stations and droppings				
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and several grasses, 5-10cm long	476742	355178	Field vole	NA
WV36	S06	2	16/05/2023	Burrow and feeding remains	Small mammal burrow <4cm wide, feeding remains up to 10cm	476742	355181	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Burrow and feeding remains	Small mammal burrow, 2cm wide, feeding signs up to 5cm	476743	355184	Unknown mammal species	NA
WV36	S06	2	16/05/2023	Latrine and feeding station	Droppings and feeding stations, 5-10cm long	476741	355195	Field vole	NA
WV36	S05	2	16/05/2023	Latrine and feeding station	Two latrines, several feeding stations, 5-10cm long	476743	355205	Field vole	NA
WV36	S05	2	16/05/2023	Latrine and feeding station	Droppings and several feeding stations 5-10cm long	476744	355213	Field vole	NA
WV36	S05	2	16/05/2023	Latrine and feeding station	Field vole droppings and several feeding stations 5-10cm long	476743	355217	Field vole	NA

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV36	S05	2	16/05/2023	Feeding remains	Grasses up to 5cm	476744	355219	Unknown mammal species	NA
WV36	S05	2	16/05/2023	Latrine and feeding station	Latrine and several feeding stations, grass 5-10cm long	476744	355226	Field vole	NA
WV36	S05	2	16/05/2023	Burrows	Two small mammal burrows, 2cm wide	476745	355233	Unknown mammal species	NA
WV14	S18	2	30/05/2023	Burrow and feeding remains	Small mammal burrow <4cm wide	478054	353876	Unknown mammal species	350
WV14	S18	2	30/05/2023	Burrow and feeding remains	Small mammal burrow 2cm wide	478027	353830	Unknown mammal species	351
WV14	S18	2	30/05/2023	Tracks	Small mammal track, too small for otter and too large for mink, 5cm x 3cm	478031	353840	Unknown	352
WV14	S19	2	30/05/2023	Burrows	Two small mammal burrows <4cm wide	478025	353821	Unknown mammal species	353
WV14	S19	2	30/05/2023	Burrow	Small mammal burrow <2cm wide	477975	353751	Unknown mammal species	NA
WV14	S20	2	30/05/2023	Burrow	Historic burrow, 2cm wide, full of debris	477962	353668	Unknown mammal species	354

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV14	S21	2	30/05/2023	Burrow	Small mammal burrow, 2cm wide near water's edge	477954	353623	Unknown mammal species	355
WV14	S21	2	30/05/2023	Burrow	Small mammal burrow at toe of bank, narrows to <4cm	477953	353602	Unknown mammal species	356
WV14	S21	2	30/05/2023	Burrow	Small mammal burrow, 2cm wide near water's edge	477951	353554	Unknown mammal species	357
WV14	S22	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide, likely field vole	477966	353515	Unknown mammal species	358
WV14	S23	2	02/06/2023	Burrow	Small mammal burrow, less than 4cm wide, near waters edge	478055	353503	Unknown mammal species	359
WV14	S23	2	02/06/2023	Burrow	Two small mammal burrows, both less than 4cm wide	478066	353521	Unknown mammal species	360
WV14	S23	2	02/06/2023	Burrow	Small mammal burrow, less than 2cm wide	478070	353534	Unknown mammal species	NA
WV14	S23	2	02/06/2023	Burrow	Small mammal burrow, narrows to less than 4cm wide	478073	353566	Unknown mammal species	361
WV14	S24	2	02/06/2023	Feeding remains	Small mammal feeding remains, soft grasses up to	478093	353591	Unknown mammal species	362

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					5cm in length				
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478096	353593	Unknown mammal species	363
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478112	353608	Unknown mammal species	364
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478116	353613	Unknown mammal species	NA
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478132	353634	Unknown mammal species	NA
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478138	353639	Unknown mammal species	365
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478144	353642	Unknown mammal species	NA
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 4cm wide	478148	353644	Unknown mammal species	NA
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow, 4cm wide	478152	353646	Unknown mammal species	NA
WV14	S24	2	02/06/2023	Burrow	Small mammal burrow near the waters edge, 2cm wide	478162	353651	Unknown mammal species	366

Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
WV14	S25	2	02/06/2023	Burrow	Two small mammal burrows, less than 4cm wide, high up the bank	478170	353651	Unknown mammal species	367
WV14	S25	2	02/06/2023	Burrow	Small mammal burrow high up the bank, 2cm wide	478183	353651	Unknown mammal species	NA
WV14	S25	2	02/06/2023	Burrow	Small mammal burrow, 4cm wide	478204	353644	Unknown mammal species	NA
WV14	S25	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478218	353638	Unknown mammal species	NA
WV14	S25	2	02/06/2023	Burrow	Small mammal burrow, 2cm wide	478228	353632	Unknown mammal species	NA
WV14	S06	2	02/08/2023	Burrow	Small mammal burrow, 4-5cm wide, likely field vole	478731	354133	Unknown mammal species	368
WV14	S06	2	02/08/2023	Droppings	Large pile of field vole droppings on the southern bank	478739	354123	Field vole	369
WV14	S06	2	02/08/2023	Burrow	Small mammal burrow, 4-5cm wide, likely field vole	478742	354120	Unknown mammal species	NA
WV14	S06	2	02/08/2023	Burrow	Large burrow at the top of the bank, potentially	478769	354095	Unknown mammal species	370



Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					rat burrow				
WV14	S06	2	02/08/2023	Burrow	Small mammal burrow, likely field vole	478774	354090	Unknown mammal species	NA
WV36	S05	2	09/08/2023	Sighting	Sighting of an unconfirmed mammal jumping into the channel of a ditch as the surveyors approached	476752	355293	Unknown mammal species	NA
WV36	S06	2	09/08/2023	Feeding remains	Small area of flattened vegetation with feeding remains, likely field vole	476747	355121	Unknown mammal species	371
WV36	S06	2	09/08/2023	Feeding remains	Flattened area of vegetation with feeding remains	476748	355128	Unknown mammal species	372
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow, 3cm wide	478069	353895	Unknown mammal species	373
WV14	S18	2	17/08/2023	Nest	Harvest mouse nest approximately 10cm	478069	353896	Unknown mammal species	NA
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow approximately	478065	353885	Unknown mammal species	NA




Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					4cm				
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow approximately 4cm	478068	353890	Unknown mammal species	NA
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow approximately 4cm wide	478067	353890	Unknown mammal species	NA
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow, 3cm wide	478062	353879	Unknown mammal species	NA
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow, 4cm wide	478054	353865	Unknown mammal species	374
WV14	S18	2	17/08/2023	Burrow	Small mammal burrow 3cm wide	478054	353864	Unknown mammal species	375
WV14	S19	2	17/08/2023	Burrow	Small mammal burrow, 3cm wide	478006	353787	Unknown mammal species	NA
WV14	S19	2	17/08/2023	Burrow	Small mammal burrow, 4cm wide	477995	353770	Unknown mammal species	NA
WV14	S19	2	17/08/2023	Burrow	Small mammal burrow, 4cm wide	477988	353760	Unknown mammal species	NA
WV14	S20	2	17/08/2023	Burrow	Small mammal burrow 2-3cm	477973	353714	Unknown mammal	376



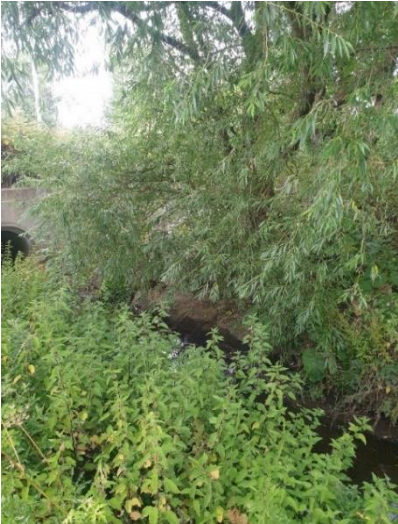
Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
					wide			species	
WV14	S20	2	17/08/2023	Tracks	Small footprints, 4 toes, no heel mark, one other of a similar size leading up to a burrow	477973	353696	Unknown mammal species	377
WV14	S20	2	17/08/2023	Burrow	Small mammal burrow, 4cm wide, small footprints in entrance	477973	353695	Unknown mammal species	NA
WV14	S20	2	17/08/2023	Burrow	Small mammal burrow, 3cm wide	477973	353691	Unknown mammal species	378
WV14	S20	2	17/08/2023	Burrow	Small mammal burrow, 3cm wide	477972	353681	Unknown mammal species	NA
WV14	S20	2	17/08/2023	Burrow	Small mammal burrow at the base of the bank, 4cm wide	477960	353637	Unknown mammal species	379
WV14	S25	2	21/08/2023	Burrow	Small mammal burrow, 3cm wide	478244	353630	Unknown mammal species	380
WV14	S25	2	21/08/2023	Burrow	Small mammal burrow, 4cm wide	478237	353630	Unknown mammal species	381
WV14	S21	2	21/08/2023	Burrow	Small mammal burrow, 2cm wide	477954	353611	Unknown mammal	382




Transect ID	Subsection	Survey visit	Date	Field Sign	Notes	Easting (X)	Northing (Y)	Species	Photo Reference (Appendix G)
								species	
WV14	S21	2	21/08/2023	Burrow	Small mammal burrow 2cm wide	477954	353588	Unknown mammal species	383




F. Appendix: Water vole habitat assessment photos




Transect ID	Photo(s)	Photo Reference
WV01_S01		1
WV01_S02		2




Transect ID	Photo(s)	Photo Reference
WV01_S03		3
WV01_S04		4
WV03_S03		5

Transect ID	Photo(s)	Photo Reference
WV03_S04		6
WV03_S05		7
WV03_S07		8




Transect ID	Photo(s)	Photo Reference
WV03_S08		9
WV03_S09		10
WV03_S10		11



Transect ID	Photo(s)	Photo Reference
WV03_S11		12
WV03_S12		13
WV03_S13		14




Transect ID	Photo(s)	Photo Reference
WV03_S01		15
WV03_S03		16
WV04_S01		17




Transect ID	Photo(s)	Photo Reference
WV04_S02		18
WV05_S01		19
WV05_S02		20




Transect ID	Photo(s)	Photo Reference
WV05_S03		21
WV05_S04		22
WV05_S05		23




Transect ID	Photo(s)	Photo Reference
WV05_S06		24
WV05_S07		25
WV05_S08		26




Transect ID	Photo(s)	Photo Reference
WV05_S09		27
WV05_S10		28
WV05_S11		29




Transect ID	Photo(s)	Photo Reference
WV06_S01		30
WV06_S02		31
WV06_S03		32




Transect ID	Photo(s)	Photo Reference
WV06_S04		33
WV06_S05		34
WV06_S06		35




Transect ID	Photo(s)	Photo Reference
WV06_S07		36
WV06_S08		37
WV06_S09		38




Transect ID	Photo(s)	Photo Reference
WV06_S10		37
WV07_S01		38
WV07_S01		39




Transect ID	Photo(s)	Photo Reference
WV07_S01		40
WV07_S02		41
WV07_S03		42

Transect ID	Photo(s)	Photo Reference
WV07_S04		43
WV08_S01		44
WV08_S02		45




Transect ID	Photo(s)	Photo Reference
WV08_S02		46
WV08_S03		47
WV08_S04		48


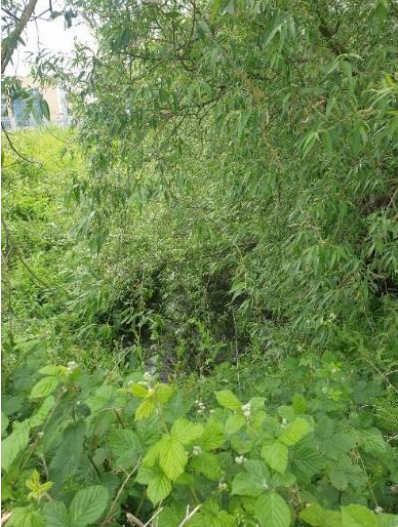

Transect ID	Photo(s)	Photo Reference
WV08_S05		49
WV08_S05		50
WV08_S06		51




Transect ID	Photo(s)	Photo Reference
WV08_S07		52
WV09_S01		53
WV09_S02		54




Transect ID	Photo(s)	Photo Reference
WV09_S02		55
WV09_S02		56
WV09_S03		57




Transect ID	Photo(s)	Photo Reference
WV09_S04		58
WV09_S05		59
WV09_S06		60




Transect ID	Photo(s)	Photo Reference
WV09_S07		61
WV09_S08		62
WV10_S01		63




Transect ID	Photo(s)	Photo Reference
WV10_S02		64
WV10_S03		65
WV11_S01		66




Transect ID	Photo(s)	Photo Reference
WV12_S01		67
WV12_S02		68
WV12_S03		69




Transect ID	Photo(s)	Photo Reference
WV13_S01		70
WV14_S01		71
WV14_S02		72




Transect ID	Photo(s)	Photo Reference
WV14_S03		73
WV14_S04		74
WV14_S05		75




Transect ID	Photo(s)	Photo Reference
WV14_S06		76
WV14_S07		77
WV14_S07		78





Transect ID	Photo(s)	Photo Reference
WV14_S08		79
WV14_S09		80
WV14_S10		81





Transect ID	Photo(s)	Photo Reference
WV14_S13		84
WV14_S14		85
WV14_S15		86




Transect ID	Photo(s)	Photo Reference
WV14_S16		87
WV14_S17		88
WV14_S18		89

Transect ID	Photo(s)	Photo Reference
WV14_S19		90
WV14_S20		91
WV14_S21		92




Transect ID	Photo(s)	Photo Reference
WV14_S22		93
WV14_S23		94
WV14_S24		95


Transect ID	Photo(s)	Photo Reference
WV14_S25		96
WV14_S26		96
WV14_S26		97
WV14_S27		98



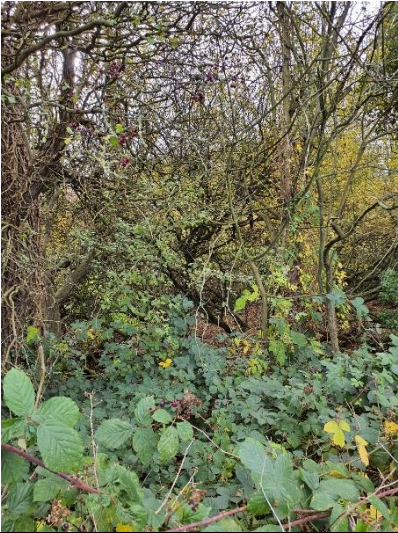
Transect ID	Photo(s)	Photo Reference
WV14_S28		99
WV14_S29		100
WV14_S30		101
WV14_S31		102




Transect ID	Photo(s)	Photo Reference
WV14_S32		103
WV14_S33		104
WV15_S01		105




Transect ID	Photo(s)	Photo Reference
WV15_S02		106
WV16_S01		107
WV16_S02		108




Transect ID	Photo(s)	Photo Reference
WV17_S01		109
WV17_S02		110
WV18_S01		111




Transect ID	Photo(s)	Photo Reference
WV18_S02		112
WV18_S03		113
WV18_S04		114




Transect ID	Photo(s)	Photo Reference
WV19_S01		115
WV19_S02		116
WV20_S01		117




Transect ID	Photo(s)	Photo Reference
WV20_S02		118
WV20_S03		119
WV21_S01		120


Transect ID	Photo(s)	Photo Reference
WV21_S02		121
WV21_S03		122
WV21_S04		123

Transect ID	Photo(s)	Photo Reference
WV21_S05		124
WV21_S06		125
WV21_S07		126

Transect ID	Photo(s)	Photo Reference
WV21_S08		127
WV21_S09		128
WV21_S10		129




Transect ID	Photo(s)	Photo Reference
WV22_S01		130
WV22_S02		131
WV23_S01		132




Transect ID	Photo(s)	Photo Reference
WV24_S01		133
WV24_S02		134
WV24_S03		135


Transect ID	Photo(s)	Photo Reference
WV25_S01		136
WV25_S01		137
WV26_S01		138



Transect ID	Photo(s)	Photo Reference
WV27_S01		139
WV28_S01		140
WV29_S02		141

Transect ID	Photo(s)	Photo Reference
WV29_S02		142
WV32_S01		143
WV32_S02		144



Transect ID	Photo(s)	Photo Reference
WV32_S03		145
WV32_S04		146
WV33_S01		147



Transect ID	Photo(s)	Photo Reference
WV34_S01		148
WV34_S02		149
WV34_S03		150



Transect ID	Photo(s)	Photo Reference
WV34_S04		151
WV34_S05		152
WV34_S06		153



Transect ID	Photo(s)	Photo Reference
WV34_S07		154
WV34_S08		155



G. Appendix: Water vole field signs photos



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S04	24/05/2022	Small mammal burrow	Unknown		156
WV02_S04	24/05/2022	Small mammal burrow	Unknown		157



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S05	24/05/2022	Small mammal burrow	Unknown		158
WV02_S07	14/07/2022	Small mammal run	Unknown		159



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S07	14/07/2022	Small mammal burrow	Unknown		160
WV02_S07	14/07/2022	Small mammal burrow	Unknown		161



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S07	14/07/2022	Small mammal burrow	Unknown		162
WV02_S08	14/07/2022	Small mammal feeding remains	Unknown		163


Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S09	14/07/2022	Mammal run	Unknown		164
WV02_S11	14/07/2022	Mammal run	Unknown		165



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S01	06/09/2022	Small mammal burrow	Unknown		166
WV09_S02	08/09/2022	Small mammal feeding remains	Unknown		167



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV10_S01	25/05/2022	Small mammal burrow	Unknown		168
WV10_S02	25/05/2022	Droppings	Unknown		169

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S07	25/05/2022	Small mammal feeding remains	Unknown		170
WV14_S07	25/06/2022	Mammal run	Unknown		171



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S07	25/05/2022	Small mammal feeding remains	Unknown		172
WV14_S07	25/05/2022	Small mammal feeding remains	Unknown		173

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S07	25/05/2022	Small mammal feeding remains	Unknown		174
WV14_S08	25/05/2022	Droppings	Likely to be rat		175



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S08	25/05/2022	Droppings	Likely to be rat		176
WV14_S08	07/09/2022	Small mammal feeding remains	Unknown		177



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S13	26/05/2022	Small mammal feeding remains	Unknown		180
WV14_S13	26/05/2022	Droppings	Rat		181



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S14	07/09/2022	Droppings	Water vole		182
WV14_S14	07/09/2022	Small mammal footprints	Unknown		183



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S14	07/09/2022	Droppings	Unknown		184
WV14_S14	07/09/2022	Droppings	Unknown		185



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S16	26/05/2022	Small mammal feeding remains	Unknown		186
WV14_S16	26/05/2022	Small mammal feeding remains	Unknown		187



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S16	26/05/2022	Small mammal feeding remains	Unknown		188
WV14_S16	26/05/2022	Small mammal feeding remains	Unknown		189




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S16	26/05/2022	Small mammal feeding remains	Unknown		190
WV14_S17	26/05/2022	Small mammal feeding remains	Unknown		191




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S17	07/09/2022	Small mammal footprints	Unknown		192
WV16_S02	07/09/2022	Small mammal footprints	Unknown		193

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV16_S02	07/09/2022	Small mammal footprints	Unknown		194
WV34_S04	09/08/2022	Small mammal footprints	Unknown		195




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S04	09/08/2022	Small mammal footprints	Unknown		196
WV34_S05	15/06/2022	Small mammal feeding remains	Unknown		197




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S07	09/08/2022	Small mammal burrow	Unknown		198
WV05_S04	04/05/2023	Burrow	Likely field vole		199




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S05	04/05/2023	Burrow	Likely field vole		200
WV05_S05	04/05/2023	Two burrows	Likely field vole		201
WV05_S05	04/05/2023	Feeding remains	Likely field vole		202

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S05	04/05/2023	Latrine and feeding remains	Likely field vole		203
WV05_S05	04/05/2023	Burrow	Likely field vole		204
WV05_S05	04/05/2023	Burrow and feeding remains	Unknown		205




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S05	04/05/2023	Latrine and feeding station	Likely field vole		206
WV05_S07	04/05/2023	Latrine and feeding station	Field vole		207
WV05_S07	04/05/2023	Burrow	Likely field vole		208




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S08	04/05/2023	Burrow	Unknown		209
WV05_S08	04/05/2023	Burrow	Likely rat		210
WV05_S08	04/05/2023	Footprints	Unknown – likely rat		211




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S08	04/05/2023	Burrow	Likely field vole		212
WV05_S08	04/05/2023	Footprints	Unknown – likely rat		213
WV05_S08	04/05/2023	Footprints	Likely mink		214




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV06_S05	05/05/2023	Burrow	Likely field vole		215
WV06_S05	05/05/2023	Burrow	Unknown mammal species		216
WV06_S05	05/05/2023	Burrow	Likely field vole		217




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV06_S05	05/05/2023	Latrine	Field vole		218
WV06_S05	05/05/2023	Burrow	Likely field vole		219
WV06_S05	05/05/2023	Burrow	Likely field vole		220




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S06	05/05/2023	Feeding remains	Unknown mammal species		221
WV14_S06	05/05/2023	Feeding remains	Unknown mammal species		222
WV14_S06	05/05/2023	Burrow	Likely field vole		223




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S06	05/05/2023	Latrine and two burrows	Likely field vole		224
WV14_S06	05/05/2023	Burrow	Likely brown rat		225
WV14_S06	05/05/2023	Feeding remains	Unknown mammal species		226




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S05	05/05/2023	Feeding remains	Unknown mammal species		227
WV14_S05	05/05/2023	Burrow	Brown rat		228
WV14_S05	05/05/2023	Burrow	Brown rat		229




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S05	05/05/2023	Burrow	Brown rat		230
WV14_S05	05/05/2023	Burrow	Likely field vole		231
WV14_S05	05/05/2023	Burrow	Likely brown rat		232




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S07	09/05/2023	Burrow	Likely brown rat		233
WV02_S07	09/05/2023	Burrow	Likely brown rat		234
WV02_S07	09/05/2023	Burrow	Brown rat or rabbit		235




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S07	09/05/2023	Burrow	Rabbit		236
WV02_S07	09/05/2023	Burrow and digging	Likely rabbit or rat		237
WV02_S13	09/05/2023	Latrine, feeding station and burrow	Field vole		238




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S13	09/05/2023	Larvae and feeding station	Unknown mammal species		239
WV02_S13	09/05/2023	Burrow and feeding station	Unknown mammal species		240
WV02_S13	09/05/2023	Feeding station	Unknown mammal species		241



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S12	09/05/2023	Feeding station	Unknown mammal species		242
WV02_S12	09/05/2023	Latrine and feeding station	Field vole		243
WV02_S12	09/05/2023	Latrine and feeding station	Field vole		244



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S12	09/05/2023	Burrow and feeding station	Field vole		245
WV02_S12	09/05/2023	Latrine and feeding station	Field vole		246
WV02_S11	09/05/2023	Feeding station	Unknown mammal species		247



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S11	09/05/2023	Latrine and feeding station	Field vole		248
WV02_S10	09/05/2023	Burrow	Likely rabbit		249
WV02_S10	09/05/2023	Burrow	Rabbit		250



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV02_S10	09/05/2023	Burrow	Rabbit		251
WV02_S10	09/05/2023	Burrow	Rabbit		252
WV05_S01	10/05/2023	Burrow	Unknown mammal species		253



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV05_S01	10/05/2023	Burrow	Field vole		254
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		255
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		256




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		257
WV32_S01	10/05/2023	Latrine and feeding remains	Field vole		258




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		259
WV32_S01	10/05/2023	Latrine and feeding station	Field vole		260




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Latrine and feeding remains	Field vole		261
WV32_S01	10/05/2023	Feeding station	Unknown mammal species		262




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Feeding remains	Unknown mammal species		263
WV32_S01	10/05/2023	Feeding stations	Unknown mammal species		264




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Latrine and feeding remains	Field vole		265
WV32_S01	10/05/2023	Latrine and feeding remains	Field vole		266




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S01	10/05/2023	Latrine and feeding stations	Field vole		267
WV32_S02	10/05/2023	Latrine and feeding station	Field vole		268
WV32_S02	10/05/2023	Burrow	Unknown mammal species		269




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV33_S01	11/05/2023	Feeding remains	Unknown mammal species		270
WV33_S01	11/05/2023	Burrow	Unknown mammal species		271
WV33_S01	11/05/2023	Burrow	Unknown mammal species		272




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV33_S01	11/05/2023	Burrow	Unknown mammal species		273
WV33_S01	11/05/2023	Burrow	Unknown mammal species		274
WV33_S01	11/05/2023	Burrow	Unknown mammal species		275




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV33_S01	11/05/2023	Feeding remains	Unknown mammal species		276
WV33_S01	11/05/2023	Burrow	Unknown mammal species		277
WV32_S04	11/05/2023	Burrow	Unknown mammal species		278




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S04	11/05/2023	Burrow	Unknown mammal species		279
WV32_S04	11/05/2023	Burrow	Unknown mammal species		280
WV32_S03	11/05/2023	Burrow	Unknown mammal species		281




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV32_S03	11/05/2023	Burrow	Unknown mammal species		282
WV34_S03	11/05/2023	Feeding remains	Unknown mammal species		283
WV34_S03	11/05/2023	Feeding remains	Unknown mammal species		284



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S03	11/05/2023	Burrow	Unknown mammal species		285
WV34_S03	11/05/2023	Burrow	Likely brown rat		286
WV34_S03	11/05/2023	Latrine and feeding station	Field vole		287




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S03	11/05/2023	Burrow	Unknown mammal species		288
WV34_S03	11/05/2023	Burrow	Unknown mammal species		289
WV34_S02	11/05/2023	Burrow	Unknown mammal species		290




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S04	12/05/2023	Feeding remains	Unknown mammal species		291
WV34_S04	12/05/2023	Feeding remains	Unknown mammal species		292
WV34_S04	12/05/2023	Feeding remains	Unknown mammal species		293




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S04	12/05/2023	Burrow	Unknown mammal species		294
WV34_S04	12/05/2023	Feeding remains	Unknown mammal species		295
WV34_S04	12/05/2023	Feeding remains	Unknown mammal species		296



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S04	12/05/2023	Burrow and feeding station	Unknown mammal species		297
WV34_S04	12/05/2023	Latrine and feeding station	Field vole		298
WV34_S05	12/05/2023	Feeding remains	Unknown mammal species		299




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Feeding remains	Unknown mammal species		300
WV34_S05	12/05/2023	Burrow and feeding station	Unknown mammal species		301




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		302
WV34_S05	12/05/2023	Burrow	Unknown mammal species		303
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		304




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Feeding stations	Unknown mammal species		305
WV34_S05	12/05/2023	Feeding stations	Unknown mammal species		306
WV34_S05	12/05/2023	Latrine and feeding stations	Field vole		307




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Latrine and feeding remains	Field vole		308
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		309
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		310




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Burrow	Unknown mammal species		311
WV34_S05	12/05/2023	Latrine and feeding stations	Field vole		312
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		313

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S05	12/05/2023	Burrow	Unknown mammal species		314
WV34_S05	12/05/2023	Feeding remains	Unknown mammal species		315
WV34_S05	12/05/2023	Latrine and feeding station	Field vole		316




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S06	12/05/2023	Burrow	Unknown mammal species		317
WV34_S06	12/05/2023	Burrow and feeding station	Unknown mammal species		318
WV34_S06	12/05/2023	Latrine and feeding station	Field vole		319




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S06	12/05/2023	Burrow	Unknown mammal species		320
WV34_S06	12/05/2023	Burrow	Brown rat		321
WV34_S07	12/05/2023	Feeding remains	Unknown mammal species		322




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S07	12/05/2023	Feeding remains	Unknown mammal species		323
WV34_S07	12/05/2023	Burrow, feeding remains and latrine	Field vole		324
WV34_S07	12/05/2023	Latrine and feeding station	Field vole		325




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S07	12/05/2023	Latrine and feeding station	Field vole		326
WV34_S07	12/05/2023	Latrine and feeding remains	Field vole		327
WV34_S07	12/05/2023	Feeding remains	Unknown mammal species		328




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S07	12/05/2023	Latrine and feeding station	Field vole		329
WV34_S07	12/05/2023	Burrow	Field vole		330
WV34_S07	12/05/2023	Latrine and feeding station	Field vole		331



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV34_S08	12/05/2023	Feeding remains	Unknown mammal species		332
WV36_S04	15/05/2023	Burrow	Unknown mammal species		333
WV36_S04	15/05/2023	Feeding station and latrine	Bank vole		334




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S04	15/05/2023	Feeding remains	Bank/field vole		335
WV36_S07	16/05/2023	Feeding remains	Unknown mammal species		336
WV36_S07	16/05/2023	Feeding remains and latrine	Field vole		337




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S06	16/05/2023	Feeding remains and latrine	Field vole		338
WV36_S07	16/05/2023	Feeding remains	Possible rat		339
WV36_S07	16/05/2023	Feeding remains	Unknown mammal species		340




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S07	16/05/2023	Feeding remains	Unknown mammal species		341
WV36_S08	16/05/2023	Burrow	Unknown mammal species		342
WV36_S08	16/05/2023	Burrow	Unknown mammal species		343




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S08	16/05/2023	Burrow	Unknown mammal species		344
WV36_S08	16/05/2023	Burrow	Unknown mammal species		345
WV36_S06	16/05/2023	Feeding remains	Brown rat		346



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S06	16/05/2023	Latrine and feeding station	Field vole		347
WV36_S06	16/05/2023	Latrine and feeding station	Field vole		348


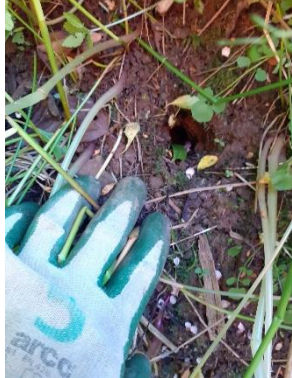
Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S06	16/05/2023	Latrine and feeding station	Field vole		349
WV14_S18	30/05/2023	Burrow and feeding remains	Unknown mammal species		350
WV14_S18	30/05/2023	Burrow and feeding remains	Unknown mammal species		351

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S18	30/05/2023	Tracks	Unknown		352
WV14_S19	30/05/2023	Burrows	Unknown mammal species		353
WV14_S20	30/05/2023	Burrow	Unknown mammal species		354



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S21	30/05/2023	Burrow	Unknown mammal species		355
WV14_S21	30/05/2023	Burrow	Unknown mammal species		356
WV14_S21	30/05/2023	Burrow	Unknown mammal species		357



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S22	02/06/2023	Burrow	Unknown mammal species		358
WV14_S23	02/06/2023	Burrow	Unknown mammal species		359
WV14_S23	02/06/2023	Burrow	Unknown mammal species		360




Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S23	02/06/2023	Burrow	Unknown mammal species		
WV14_S23	02/06/2023	Burrow	Unknown mammal species		361
WV14_S24	02/06/2023	Feeding remains	Unknown mammal species		362



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S24	02/06/2023	Burrow	Unknown mammal species		363
WV14_S24	02/06/2023	Burrow	Unknown mammal species		364



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S24	02/06/2023	Burrow	Unknown mammal species		365
WV14_S24	02/06/2023	Burrow	Unknown mammal species		366
WV14_S25	02/06/2023	Burrow	Unknown mammal species		367



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S06	02/08/2023	Burrow	Unknown mammal species		368
WV14_S06	02/08/2023	Droppings	Field vole		369



Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S06	02/08/2023	Burrow	Unknown mammal species		370
WV36_S06	09/08/2023	Feeding remains	Unknown mammal species		371


Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV36_S05	09/08/2023	Feeding remains	Unknown mammal species		372
WV14_S18	17/08/2023	Burrow	Unknown mammal species		373
WV14_S18	17/08/2023	Burrow	Unknown mammal species		374

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S18	17/08/2023	Burrow	Unknown mammal species		375
WV14_S20	17/08/2023	Burrow	Unknown mammal species		376

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S20	17/08/2023	Tracks	Unknown mammal species		377
WV14_S20	17/08/2023	Burrow	Unknown mammal species		378

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S20	17/08/2023	Burrow	Unknown mammal species		379
WV14_S25	21/08/2023	Burrow	Unknown mammal species		380

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S25	21/08/2023	Burrow	Unknown mammal species		381
WV14_S21	21/08/2023	Burrow	Unknown mammal species		382

Transect ID	Date	Field Sign	Species	Photo(s)	Photo Reference
WV14_S21	21/08/2023	Burrow	Unknown mammal species		383