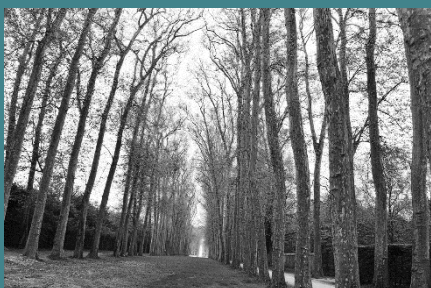


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APPENDIX 7.7: WATER VOLE REPORT

Client

Hallam Land Management Ltd.

Project

Land East of Knowsley Lane, Knowsley

Date

August 2025

CONTENTS

1.0 INTRODUCTION 2

2.0 LEGISLATION 2

3.0 METHODOLOGY 3

4.0 RESULTS 7

5.0 CONCLUSION 15

TABLES

- Table 1: Assessing the value of habitat for Water voles (Deans, 2021 – Table 21).
- Table 2: Assessment of relative water vole population density
- Table 3: Summary of habitat suitability prior management

FIGURES

Figure 7.7.1: Water vole survey plan

Rev	Issue Status	Prepared/Date	Reviewed by	Approved/Date
	Draft	PA / 08.07.2025	SE / 17.07.2025	AJB / 31.07.2025

1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd for Hallam. It provides the results of water vole surveys undertaken at Land East of Knowsley Lane, Knowsley (Central OS Grid Ref: SJ43739466), herein referred to as 'the Site' (see Figure 1 of the EclA for location).
- 1.2 This document should be read in conjunction with the other ecological documents prepared for this application, comprising the Ecology and Biodiversity chapter of the Environment Statement (Chapter 7), and other associated Appendices.

Objectives

- 1.3 The purpose of this report is to:
- Present and discuss the results of water vole surveys undertaken;
 - Determine any likely impacts to water vole as a result of the proposed development; and
 - Present a strategy for mitigation and compensation in order to minimise any impacts and, where present, ensure that the Favourable Conservation Status of any water vole population, if present, are maintained.

Description of Works Likely to Impact Water Vole

- 1.4 The proposals for the Site include up to 700 new dwellings with associated access and gardens. Green infrastructure proposals include the retention and enhancement of existing woodland and scrub and creation of additional native mixed scrub, individual trees, species rich grassland and woodland. This will provide a buffer and enhancement to retained woodland habitat. Other habitats include formal and informal amenity grassland areas, a traditional orchard and ornamental planting.
- 1.5 The water bodies will not be directly impacted by the development, however there will likely be an increased levels of recreational use following development .
- 1.6 See Figure 7.7.1 for waterbody locations in relation to the Site.

2.0 LEGISLATION

- 2.1 Water voles are fully protected under The Wildlife and Countryside Act 1981 (as amended) (WCA). This makes it an offence to:
- intentionally kill, injure or take water voles;
 - possess or control live or dead water voles or derivatives;
 - intentionally or recklessly damage, destroy and obstruct access to any structure or place used by water voles for shelter or protection;
 - intentionally or recklessly disturb water voles whilst they are using such a place;
- 2.2 Water voles are listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.
- 2.3 If water voles are found to be present and impacts cannot be avoided, then depending on the size of area to be affected, an appropriate Protected Species Conservation or Mitigation Licence from Natural England may be required. Suitable mitigation will be implemented to ensure this

species comes to no detrimental harm during and after development and the scheme results in a conservation benefit to the species.

3.0 METHODOLOGY

Desk Study

3.1 A desktop survey was undertaken to compile existing ecological data regarding the presence of water vole within 2km of the Site. The following organisation was contacted:

- Biobank Merseyside.
- Multi Agency Geographical Information for the Countryside (MAGIC) website².

3.2 Further inspection, using colour 1:25,000 OS base maps and aerial photographs³ was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

Habitat Assessment

3.3 An initial habitat assessment was made by an experienced surveyor to determine the suitability of habitats within the Site to support water voles.

3.4 Habitat requirements were based on those detailed in current guidance^{4,5} and include:

- dry areas above water level for nesting, either in burrows or above-ground woven nests
- steep bank profiles
- suitable bank substrate for burrowing
- daily water level fluctuations
- herbaceous marginal and bankside vegetation
- suitable water depth (as a means of escape from predators)

3.5 The habitats can then be categorised according to the following matrix (table 1):

² Department for Environment, Food & Rural Affairs. (n.d.). MAGIC Map. MAGIC. <https://magic.defra.gov.uk/MagicMap.aspx>

³ (www.ordnancesurvey.co.uk)

⁴ Dean, M., Strachan, R., Gow, D & Andrews, (2016) The Water Vole Mitigation Handbook. The Mammal Society Guidance Series. The Mammal Society, London.

⁵ Dean, M, (2021) Water Vole Field Signs and Habitat Assessment: A Practical Guide to Water vole Surveys, Pelagic Publishing.

Table 1: Assessing the value of habitat for water voles (Deans, 2021 – Table 21).

Habitat category	Bank profile	Bank substrate	Variation in water level	Herbaceous vegetation	Water
	Dry areas for burrows or nests				
Optimal (all criteria need to be met)	Steep (approaching 1:1) on at least one side of a watercourse. Steep or shallow banks on static waterbodies or fen-type habitat, where water levels do not fluctuate significantly	Earth or peat	No noticeable variation during the summer months; banks are not overtopped regularly ^a	Continuous swathe of tall and luxurious riparian vegetation providing 90-100% cover on the banks (tall tussocky grassland) and marginal/in-channel vegetation is present (emergent species)	Permanent water
Good (all criteria need to be met)	Steep (approaching 1:1) on at least one side of a watercourse. Steep or shallow banks on static waterbodies or fen-type habitat, where water levels do not fluctuate significantly	Earth or peat bank, or stony/reinforced bank with gaps allowing access to the earth behind	No noticeable variation during the summer months; banks are not overtopped regularly	Continuous swathe of bankside or in-channel (emergent) vegetation providing at least 60% ground cover. May be dominated by grasses and weeds, rather than luxurious riparian vegetation. The vegetation should generally be tall, except in urban or suburban areas, where shorted bankside vegetation may also qualify	Permanent water or routinely wet for at least 2-3 months during the summer, and where other 'good' habitat is present in immediately adjacent areas with permanent water
Suitable but poor ^b	Any habitat that falls short of the criteria to qualify as 'good' but does not meet the criteria of 'negligible value' could reasonably be considered to be suitable but 'poor'				

Habitat category	Bank profile	Bank substrate	Variation in water level	Herbaceous vegetation	Water
	Dry areas for burrows or nests				
Negligible value ^c	Shallow profile on both banks	Rocky or gravel, unsuitable for burrowing	Considerable variation in water level – the bank toe can move by more than 1m horizontally over the breeding season	No or limited bankside and marginal vegetation (due to shading or other 'permanent' factors – note that management can change and is often a 'temporary' factor)	n/a
	Vertical bank face with no burrowing opportunities behind it	Reinforced banks with no gaps	n/a		n/a

^a overtopping once every 5-10 years is likely to be too frequent in most cases; overtopping less frequently than this may also be problematic for water voles.

^b the term 'suitable but poor' is used to avoid the possible misinterpretation of this habitat category opposed to the term 'poor', which some would dismiss as 'unsuitable'.

^c will generally need to meet the criteria for herbaceous vegetation and at least one other

Field Survey

- 3.6 Early season presence / absence surveys took place on 8th April 2025 in accordance with the Water Vole Mitigation Handbook (2016)⁶, and involved a systematic search for evidence of water vole activity at the water's edge and within 5m, within suitable habitat. These surveys were undertaken by experienced ecologists (see Appendix 7.10 for details). A late season (2nd phase) presence / absence was undertaken on 7th July 2025.
- 3.7 The survey included all ponds inside the red line boundary Figure 7.7.1 indicates the survey area.
- 3.8 The banks/margins of the waterbodies and suitable habitat were surveyed for evidence of:
- water voles – live sightings;
 - latrines - distinct piles of water vole droppings found near nest sites, at the ranges of territorial boundaries and where the animals enter and leave the water. The presence of droppings is the only field sign which can be used reliably on its own;
 - burrows - burrow entrances are typically wider than high with a diameter between 4 and 8cm. Generally, these burrow entrances are located at the water's edge;
 - feeding stations - areas with distinct neat piles of chewed lengths of vegetation along pathways or haul out platforms along the water's edge;
 - footprints - identifiable prints in soft margins of the watercourse;
 - runways - low tunnels that are pushed through the vegetation and often leading to burrows or feeding stations; and
 - nest balls – woven vegetation of approximately the size and shape of a rugby ball, usually found within a tuft of vegetation above the water line.

Assessment Rationale of Water Vole Survey Results

- 3.9 Water voles typically form a series of contiguous territories along the length of a watercourse. As many of the habitats that water voles tend to occupy in the UK are linear (e.g. streams / rivers / banks of waterbodies) it is therefore appropriate to measure their territory sizes in terms of 'length' in most UK habitats. Breeding female water voles are territorial, and their territories represent a 'breeding unit'; territory size will influence the number of breeding females that a given length of habitat can support. Frequent interactions and the presence of marker latrines determine the boundaries of a territory. Females may share their breeding unit with their female offspring; males are not territorial as such but have ranges that overlap with the ranges of many females and other males (Strachen et. al 2011)⁷.

Limitations

- 3.10 The desk study used species data derived from records submitted by members of the public and from specialist volunteer group surveys. It does not represent a definitive list of species that occur in the local area, and the absence of records does not necessarily imply absence of such species.

⁶ Dean, M., Strachan, R., Gow, D & Andrews, (2016) The Water Vole Mitigation Handbook. The Mammal Society Guidance Series. Eds F. Matthews & P. Chanin. The Mammal Society, London.

⁷ Strachan, R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook 3rd Edition. Wildlife Conservation Research Unit, Oxford.

Survey data

In accordance with CIEEM's "Advice Note on the Lifespan of Ecological Reports and Surveys"⁸, survey data older than 18 months may require reassessment based on specific ecological factors.

4.0 RESULTS

Desk Study

- 4.1 Relevant results received from the 2km data search with LERC relating to water vole are spatially represented in Figure 1 of the EclA (FPCR, 2025).
- 4.2 Within 2km of the Site, 22 water vole records were returned. The closest are 880m to the north. Additionally, The River Alt LWS, located 837m to the north west is designated for the presence of a small number of water vole. There are no direct hydrological links to the Site from these locations.
- 4.3 The LERC did not provide any records of European mink *Mustela lutreola* within 2km of the Site boundary

Field Survey

- 4.4 No wet ditches were identified during the surveys.
- 4.5 Pond 2, Pond 3 and Pond 6 were considered to provide 'negligible' suitable water vole habitat and as such were not surveyed.
- 4.6 Pond 4 was classified as 'Good' suitability. Pond 1, Pond 5 Pond 7 and Pond 8 were classified as 'Suitable but poor'. No evidence of water vole was found during the surveys. Details of the surveys are included in Table 3 below.

⁸ CIEEM (2019). *Advice Note on the Lifespan of Ecological Reports and Surveys*. Chartered Institute of Ecology and Environmental Management, Winchester.

Table 3: Water vole survey results summary.

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P1		Suitable but poor	Survey Length	37m surveyed	0m	Full/ No Evidence 2 nd survey pond dry, Not surveyed
			Depth	<50cm	0m	
			Width	2-5m	0m	
			Substrate	Silt/ mud	Silt/ mud	
			Current	Stats	n/a	
			Profile	Shallow < 45°, Flat <10°	n/a	
			Bank substrate	Earth	n/a	
			Vegetation	Bank Trees, Bushes, Herbs, Floating plants	n/a	
			Comment	Very shallow, muddy, silty	Dry	

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P2		Negligible	Not surveyed			N/A
P3		Negligible	Not surveyed			N/A

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P4		Good	Survey Length	34m surveyed	34m surveyed	Full No evidence.
			Water Depth	1-2m	1-2m	
			Width	10-20m	10-20m	
			Substrate	Silt/Mud	Silt/Mud	
			Flow	Statis	Statis	
			Profile	Steep >45°	Steep >45°	
			Bank substrate	Earth	Earth	
			Vegetation	Tall grass, Herbs, Nettles, Reeds	Tall grass, Herbs, Nettles, Reeds	
			Comment	Open pond with some submerged veg. Dog walking paths around the edge	Open pond with some submerged veg. Dog walking paths around the edge. Terrapin identified in pond	

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P5		Suitable but poor	Survey Length	50m surveyed	25m	Full/ No evidence
			Water Depth	0.5-1m	0.5-1m	
			Width	10-20m	10-20m	
			Substrate	Silt/Mud	Silt/Mud	
			Flow	Statis	Statis	
			Profile	Shallow <45°, Flat <10 degrees	Shallow <45°, Flat <10 degrees	
			Bank substrate	Silt, Earth	Silt, Earth	
			Vegetation	Bank Trees, Bushes	Bank Trees, Bushes	
			Comment	Silty, shallow, very little aquatic veg	Silty, shallow, very little aquatic veg	

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P6		Negligible	Not surveyed			N/A

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P7		Suitable but poor	Survey Length	31m	31m	Full / No evidence.
			Water Depth	<50cm	<50cm	
			Width	10-20m	10-20m	
			Substrate	Silt/ mud	Silt/ mud	
			Flow	Static	Static	
			Profile	Shallow < 45°, Flat <10°	Shallow < 45°, Flat <10°	
			Bank substrate	Earth	Earth	
			Vegetation	Bank Trees, Bushes, Herbs, Floating plants	Bank Trees, Bushes, Herbs, Floating plants	
			Comment	Very shallow, muddy, silty	Very shallow, muddy, silty	

Ref	Picture	Habitat Suitability	Description	08/04/25	07/07/25	Survey method/ Results
P8		Suitable but poor	Survey Length	72m	0m	Full/ No Evidence 2nd survey pond dry, Not surveyed
			Water Depth	<50cm	0m	
			Width	5-10m	0m	
			Substrate	Silt/ mud	Silt/Mud	
			Flow	Statis	n/a	
			Profile	Shallow < 45°, Flat <10°	n/a	
			Bank substrate	Earth	Earth	
			Vegetation	Bank Trees, Bushes, Herbs, Floating plants	n/a	
			Comment	Very shallow, muddy, silty	Dry	

5.0 CONCLUSION

- 5.1 As no conclusive water vole field signs were recorded on or within the vicinity of the Site, it is considered that water voles are likely absent from site and therefore will not be impacted by proposals. Current proposals do not lead to the loss of any potentially suitable water vole habitat .

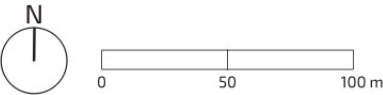
General Measures During Construction

- 5.2 The potential for contamination of waterbodies (with sediment, chemicals, or hydrocarbons), is a risk associated with all development sites. As such, best practice guidelines will be adhered to at all times to ensure no adverse impact upon the retained waterbodies and their associated fauna. Appropriate precautions will be incorporated into a Construction Environmental Management Plan (CEMP) which will be implemented to control the works.

FPCR Environment and Design Ltd

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Site Boundary

Pond type

Dry Pond

Pond

Pond type	Label	Evidence of Water voles
Pond	P 01	None
Dry Pond	P 02	None
Dry Pond	P 03	None
Pond	P 04	None
Pond	P 05	None
Dry Pond	P 06	None
Pond	P 07	None
Pond	P 08	None

date 08/08/25 drwn/chkd DV / ER

client Hallam Land Management Ltd

project Land east of Knowsley Lane, Knowsley

title Water vole prescence scale 1:3,000 @ A3

number rev

FIGURE 7.7.1