

Appendix 8-7

Water Vole and Otter Habitat Appraisal

INTRODUCTION

To inform the proposed highways improvement works on the A27 East of Lewes, hereafter referred to as 'the scheme', a habitat appraisal of riparian habitat on the River Cuckmere was completed in August 2018 to assess the potential for water vole *Arvicola amphibious* and otter *Lutra lutra*. The approach taken and results of the habitat appraisal are contained within this memo.

It is understood that the proposed cycleway will cross the River Cuckmere via a new bridge, to the south in parallel with the current road bridge (Sherman Bridge). It is therefore considered that riparian habitats may be impacted during the construction of the proposed bridge.

METHODS

The habitat suitability appraisal comprised an ecological desk study and field survey in line with good practice¹. A Survey Area was defined that encompassed the riparian habitat within a minimum of 50m up- and down-stream of the River Cuckmere where it passes under the A27 at Sherman Bridge (Grid Reference TQ 53191 05056) (see Figure 1).

The desk study involved the collation of existing records held by the Sussex Biological Record Centre (SXBRC).

The field survey entailed an initial habitat assessment completed by an experienced surveyor and associate member of Chartered Institute of Ecology and Environmental Management (CIEEM) on 23rd August 2018. Images were collected and are provided in Appendix 1.

WATER VOLE HABITAT SUITABILITY APPRAISAL

The objective was to determine whether the River Cuckmere supports habitat preferred by water voles. The following requirements were considered

- Dry areas above water level that could provide suitable shelter (either in burrows or above ground woven nests)
- Herbaceous vegetation to provide food and cover
- Water, as means of escape from predators.

In general, water voles require all three of these habitat features in close proximity to each other, although there are circumstances where water voles survive in less favourable habitat.

¹ Dean, M., Strachan, R., GOw, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

OTTER HABITAT SUITABILITY APPRAISAL

Otters are highly territorial animals with large home ranges; depending on the quality of the habitat and availability of food males can range along rivers for 35km. The objective of the habitat suitability appraisal was to consider whether otters may utilise habitat in the immediate vicinity of the proposed bridge rather than to assess the potential for the catchment to be used by otter. Where structures were present within the Survey Area these were checked for signs of otter (i.e. spraints)².

RESULTS

WATER VOLE HABITAT SUITABILITY APPRAISAL

The desk study identified five records of water vole within 2km of the Scheme (dating from 2002 to 2005). The closest record to the Scheme was approximately 0.1km south at Firlie Park, which is approximately 6.5km east of the River Cuckmere. Three records were identified in the Arlington Reservoir, approximately 2km north of where the River Cuckmere passes under the Sherman Bridge. The River Cuckmere runs within 0.1km of the Arlington Reservoir, which provides good connectivity to the Survey Area.

The stretch of the river within the Survey Area is relatively deep, with pools approximately 1-2m in depth and approximately 4-5m at its widest. The river is slow flowing, running in a southerly direction. The banks of the river are reinforced directly under and adjacent the Sherman Bridge with concrete and sheet pile wall. These reinforced banks are unsuitable for water vole to create their burrows. The river pools to the south of the bridge, where a large sheet pile wall has been built on the south bank. A weir was identified approximately 150m north of the bridge. Land surrounding the river is predominately agricultural. A footpath runs along the west bank of the river north of the bridge, with evidence of recreational fishing.

The river banks are made from earth beyond approximately 7m south of the bridge and 4m north of the bridge. North of the bridge, the banks are steep and provide suitable burrowing habitat. The tops of the banks are dominated by dense bramble *Rubus fruticosus* agg. and common nettle *Urtica dioica* in places, with more marginal species present nearer the water including purple loosestrife *Lythrum salicaria*, meadowsweet *Filipendula ulmaria*, common reed *Phragmites australis*, sedge species *Carex* sp. and rush species *Juncus* sp. There is some shading of the river by large willows *Salix* sp. on the north-west bank. South of the Sherman Bridge the earth banks are shallower in gradient and dominated by coarse grasses and common reed, with occasional sedge and rush species. Himalayan balsam *Impatiens glandulifera* was also recorded, on the banks north and south of the bridge.

In stream vegetation is frequent and species recorded includes, yellow flag iris *Iris pseudacorus*, white water lily *Nymphaea alba*, yellow water lily *Nuphar lutea*, burr-reed species *Sparganium* sp,

² Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

floating sweet grass *Glyceria fluitans* and duckweed *Lemna* sp. Duckweed chokes the surface of the river south of the bridge.

The bankside vegetation provides suitable fodder for water voles, dense cover and a range of marginal and aquatic species associated with optimal water vole habitat. The water depth appears to typically be sufficient to provide a means of escape from predators.

No signs of current use by water vole were incidentally recorded, however the gradient and density of bank vegetation limited access and visibility. Scat thought to be of mink *Neovision vison* were recorded next to a culvert approximately 5m south of the Sherman Bridge (see Figure 1).

OTTER HABITAT SUITABILITY APPRAISAL

The desk study identified no records of otter within 2km of the Scheme.

The river channel provides suitable habitat for otter to move through the area. The river is also likely to provide suitable foraging opportunities to otter given its ability to support fish and invertebrate species. The banks of the river provide suitable resting places for otter. During typical flow otters may pass below the Sherman bridge or use concrete ledges present under the bridge.

No signs of current use by otter were incidentally recorded. Large mammal pathways were noted on the south bank of the river, south of the Sherman Bridge.

INTERPRETATION AND RECOMMENDATIONS

The riparian habitat along the River Cuckmere in the near vicinity of the Scheme provides optimal habitat for water vole, and suitable habitat for otter to pass through.

It is concluded unlikely that water voles are present in association with this habitat given mink were confirmed to be present and the lack of water vole evidence recorded. Mink are a voracious predator of water vole and have attributed to their rapid decline throughout the UK. Their presence is likely to further reduces the chance that water vole may colonise these channels in the near future. Records of water vole are also all over 10 years of age, suggesting a likely absence of the species during the period of time since then.

The forthcoming highways improvements include the construction of a new bridge to support the cycleway. It will be important to ensure that the improvements do not detrimentally affect the River Cuckmere and where possible ecological enhancements are achieved. It is understood that the proposed bridge will be built upon the existing retaining wall and will therefore have no or minimal effects upon the vegetated river banks.

Given the suitability of the surrounding habitat for water vole and otter, it is however recommended that a pre-construction survey is undertaken. The walkover should include a search for water vole and otter evidence within suitable habitat immediately adjacent the proposed bridge location, and confirm that habitat conditions have not changed between this habitat appraisal and the start of works.

During the construction stage actions will be required to avoid incidental pollution events, and the spread of non-native species. Specifically, measures will be required to prevent the spread of Himalayan balsam, a species listed under Schedule 9 of the Wildlife and Countryside Act 1981 making it an offence to cause its spread in the wild.

APPENDIX 1

Table 1 - Water Vole and Otter Habitat Appraisal Photograph

PHOTO NUMBER	PHOTO	DESCRIPTION
1		River Cuckmere north of the Sherman Bridge. Steep banks, densely vegetated with bramble. Riparian species growing at the base of the bank.
2		River Cuckmere north of the Sherman Bridge as taken from under the bridge. In-stream vegetation present. Concrete ledges to allow for mammal passage during high waters.
3		River Cuckmere south of the Sherman Bridge. Shallower banks dominated by reed, coarse grasses and riparian species. The river surface is choked with duckweed.

**PHOTO
NUMBER**

PHOTO

DESCRIPTION

4		River Cuckmere south of the Sherman Bridge, riparian vegetation.
5		River Cuckmere south of the Sherman Bridge. The deep pool just south of the bridge and the reinforced retaining walls.
6		River Cuckmere south of the Sherman Bridge. Shallower banks dominated by reed, coarse grasses and riparian species. Arable fields are present east and west of the river.
7		River Cuckmere south of the Sherman Bridge. American mink scat located around the deep pool adjacent a culvert.

**PHOTO
NUMBER**

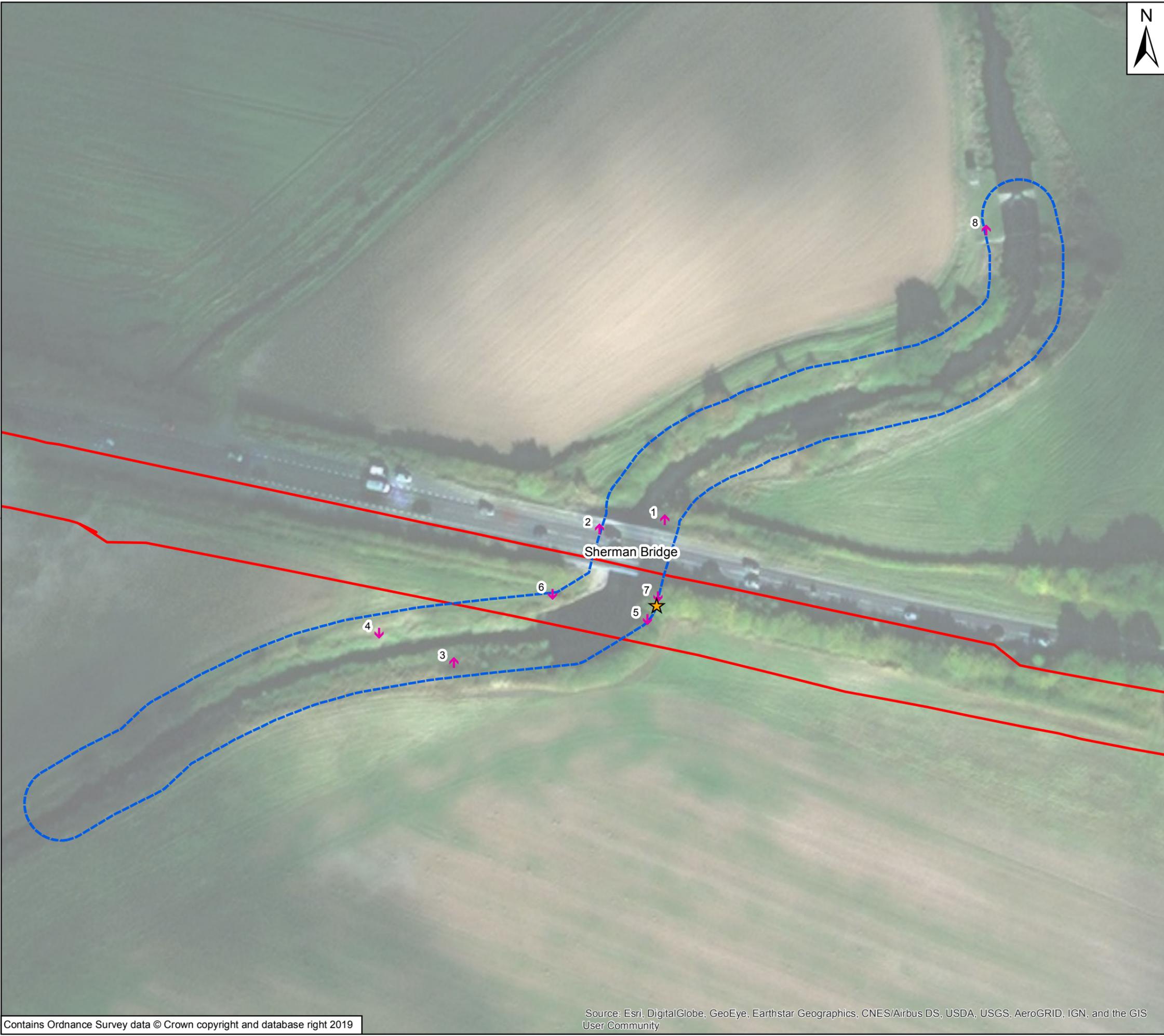
PHOTO

DESCRIPTION

8



Weir located approximately 150m north of the Sherman Bridge. This is likely to form a slight barrier to water vole and otter movement.

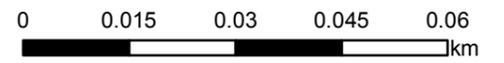


Key

- Scheme Extent
- Survey Area
- ★ Mink Scat

Photo Number/Direction

- ↑ North
- ↓ South



Client:	Highways England
Project:	A27 East of Lewes
Title:	Water Vole & Otter Habitat Appraisal

Drawing No: Figure 1	Drawn: BW
Date: January 2019	Checked: VD
Scale: 1,000 @ A3	Approved: LR