

River Og, Bay Meadows

Water Vole and Otter Survey





Nick Wilson – Water Team Project Officer - March 2022

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1.0 Background

- 1.1 This report details the findings of a water vole *Arvicola amphibious* and otter *Lutra lutra* survey of Bay Meadows Nature Reserve, near Marlborough on the River Og (NGR: SU 18748 70991 to SU 19150 70243).
- 1.2 The survey was conducted by Nick Wilson, Project Officer at Wiltshire Wildlife Trust on the 30th March 2022.
- 1.3 The survey was undertaken to inform a scheme of river restoration, habitat improvement works and fencing on the site. This also includes the building of two bridges and provision of footpaths.
- 1.4 The site is made up of one central channel with a network of dry ditches.
- 1.5 Both banks of the river are fenced off leaving a wide vegetated buffer zone. This ranges from ~10m to ~1m in width, with a mode width of ~2m.
- 1.6 Up until the Wiltshire Wildlife Trust recently acquired the site both banks were grazed outside the fencing.

2.0 Legislation

2.1 Otters

- 2.1.1 Otters are a European Protected Species under The Conservation of Habitats and Species Regulations 2010 (as amended) which makes it an offence to:
 - Deliberately capture, injure or kill an otter
 - Deliberately disturb an otter
 - Damage or destroy a breeding site or resting place of an otter
- 2.2.2 Disturbance is defined as any activity that is likely to result in impairment of an otter's ability to survive, breed or rear young or significantly affect the local distribution and abundance of the species. In reference to hibernating or migratory species, this "disturbance" also includes interfering with hibernation or migratory behaviour.
- 2.2.3 Otters are also conferred protection under the Wildlife and Countryside Act 1981 (as amended). It is therefore illegal to:
 - Intentionally or recklessly disturb an otter whilst it is occupying a structure or place used for shelter or protection.
 - Intentionally or recklessly obstruct access to any structure an otter uses for shelter or protection.
 - Possess, sell or offer for sale any otter (dead or alive).

2.2 Water Voles

2.2.1 Water voles are protected under Schedule 5 of the Wildlife and Countryside Act, 1981 (as amended). It is an offence to:

- Intentionally kill, injure or take a water vole.
- Intentionally or recklessly damage or destroy a place a water vole is using for shelter or protection.
- Intentionally or recklessly disturb a water vole in a place or structure it is using shelter or protection.
- Intentionally or recklessly obstruct a water vole's access to a place or structure used for shelter or protection.
- Possess (live or dead), sell or offer for sale a water vole.

3.0 Methodology

3.1 Desk Based Study

3.1.1 Prior to field survey, a desk study was undertaken to identify any previous records of otter and water vole in the area. A data search from the Wiltshire and Swindon Biological records centre was used to investigate any historical records within a 1km buffer zone of the site.

3.2 Field Study

3.2.1 A survey to identify signs of otters and water voles was carried out on the 30th March 2022. The purpose of the survey was to establish the presence or absence of water vole along the stretch to inform the design of habitat enhancement structures and identify any mitigation that may be needed to be put in place if either species are present. A detailed visual search of the stretch of the watercourse was undertaken.

3.2.2 The survey was carried out during the day after a period of fine weather, where water voles were likely to be active and evidence of their presence evident to the surveyor. It is noted that this survey was undertaken early in the year and a second survey will be required later in the year as water vole distribution can change markedly over the course of the breeding season.

3.2.3 The survey was carried out in an upstream direction, from both banks and within the river channel.

3.2.4 The survey was split into two sections. Section 1 and 2. See appendix (figure 5).

Water Vole

3.2.5 The survey was undertaken in line with the Water Vole Conservation Handbook (Strachan & Moorhouse, 2011). Both banks of the stretch were searched for field signs indicating the presence of water vole in the area (i.e: latrines, feeding stations and burrows). Additionally, careful assessment of the habitat quality was undertaken.

3.2.6 Field signs that would indicated the presence of water vole are detailed below.

- Faeces: these are 8-12mm in length, 4-5mm wide and tic-tac shaped. They vary in colour from green to black, have a putty like texture and are odourless.
- Latrines: can be found throughout a water vole territory, they often comprise of a pile of flattened droppings with fresh droppings on top. They are used to mark range boundaries or favoured spots close to burrows. Latrines are indicators of territorial behaviour, which may indicate breeding activity.
- Feeding stations: these comprise of a pile of chewed feeding remains. These are usually lengths of vegetation, showing the marks of the two large incisors. The stems are often nibbled off at a distinctive 45° angle.
- Burrows: typically wider than they are long with a rough diameter of 4-8cm and usually located along the water's edge, including underwater entrances, but can be up to 3m from the water.
- Lawns: there is often an area of grazed vegetation outside of the burrow entrance. These are most often produced later in the season when they female is nursing young.
- Nests: these consist of shredded material, often woven in to the bases of marginal vegetation. They are most frequent in areas where the water table is high, such as wetlands and fen.
- Footprints: Similar to other rodents, water vole footprints show a fore foot with four toes in a star arrangement and a hind foot showing five toes. The footprint usually measures between 26 and 34mm.
- Runs: these are tunnels through the marginal vegetation which often occur at the water's edge.

Otter

3.2.7 The survey was undertaken in line with the methodology and guidance set out in Chanin and Smith (2003). A detailed visual search of the watercourse was undertaken to identify any field signs that may indicate otter activity. Presence or absence of otter field signs was recorded. Field signs include:

- Holts: holes often found in river banks or under tree roots in the riparian zone which otters use for shelter. Entrances may be under the water.
- Couches: an above ground nest-like structure used as a resting place
- Footprints: may be seen in sand or soft mud (i.e: when water levels are low leaving exposed mud at the bank). Footprints are characterised by five toes spaced in an arch around the front of a broad pad. In particularly soft ground claw marks and webs between toes may be visible. Sand and sediment deposits along rivers and under bridges should be checked carefully.
- Otter runs: otters will use the same routes within their territory to access rivers, the paths are usually worn leading down the banks to the river. A 'slide' may be evident at the end, this consists of well-worn mud as the otters slide in to the water.
- Spraint: otter faeces, made up of clearly visible fish bones and scales, some other small bones, fur, insect fragments and other indigestible remains are sometimes present. Spraints will be found in prominent locations adjacent to the river – for example, tree stumps, large rocks, tussocks and ledges under bridges. Occasionally otters may build a 'castle' of sand or mud along the river and spraint on top of this. Fresh spraint will typically be black and tarry with a distinctive sweet, musky smell.
- Anal jelly: a secretion that appears jelly like and smells strongly of otter. This can vary in colour from pale brown, greenish to amber.
- Feeding remains: the 'left-overs' from an otter's meal, may include fish remains or items such as crayfish claws. Will be found along the river bank, close to the water.
- Other signs: e.g – remains of dead otters may be seen along roads near the site.

4.0 Results

4.1 Desk Based Study

4.1.1 31 records of water vole were recovered with the 1km buffer zone search of the Wiltshire and Swindon Biological Records Centre. 4 of these records were submitted after the year 2000 with the most recent of these was from 2020. Four records of otter were recovered from between 2014 and 2020, and there is no record of American mink present in the area.

4.2 Water Vole

4.2.1 Section 1

4.2.1.1 Both banks of section one were surveyed within the channel (figure 1).

4.2.1.2 The TLB profile is shallow, several metres wide in some instances, with wide toes of emergent vegetation. There are very occasional steeper areas of bank focussed in the

upstream end of the section. The top of the bank has extensive tussocks either side of the fence line. Trees are sparse on this bank with the occasional goat willow present in the upstream half of the section.

4.2.1.3 The TRB profile was similar to the TLB, predominantly shallow with few areas where the bank profile was steep enough to be conducive for burrowing. The exception being the extreme downstream end of the section where the bank profile was steeper in some short lengths. There is extensive marginal vegetation right up to the bank top and beyond. Occasional mature trees, predominately goat willow were present at the upstream end of the section.



Figure 1: Looking upstream from the downstream boundary of section 1.

4.2.1.4 Habitat throughout section 1 is deemed to be either optimal or good for water vole. The lack of bank suitable for burrowing is likely to be a limiting factor. Only occasional sections of bank, that are immediately adjacent to the river, are steep enough to support water vole burrowing.

4.2.1.5 It is in or near these areas that occasional water vole activity is observed (figure 5). Water vole burrows were present intermittently throughout this section in the areas described above. With only a few isolated feeding remains present signifying recent water vole activity. No latrines or droppings were found in section 1.

4.2.2 Section 2

4.2.2.1 Like section 1 there are large areas of the TLB that are shallow in profile, several metres wide in some instances, with wide toes of emergent vegetation. However, unlike section 1

there are also sections of bank ideal for water vole burrowing. Trees are absent on this bank throughout, except the very upstream and downstream extremes.



Figure 2: Looking upstream in section 2 towards areas of intense water vole activity in the flag iris beds on the TRB.

4.2.2.2 The TRB profile is shallow in profile throughout, albeit for one area midway through the section where the bank is suitable for water vole burrowing. There is extensive marginal vegetation out into the channel with occasional established flag iris beds (figure 2). In the upper half the section this marginal vegetation can extend >5m wide in places. Occasional mature trees, predominately goat willow were present at the upstream end of the section. Outside the fence line on the bank top areas of tussock and semi improved grassland are present.

4.2.2.3 Habitat throughout section 2 is deemed to be either optimal or good for water vole, with optimal areas focussed around areas of bank suitable for burrowing.

4.2.2.4 It is in these areas that activity is most intense with widespread burrowing and feeding activity observed (figure 5). Feeding was most concentrated in the iris beds (activity that was not observed in the iris beds in section 1). Latrines were also present, often in or near to the entrance to burrows, although they were also seen on rafts of floating vegetation and an old log (figure 3 and 4).



Figure 3: An example of a latrine found in section 2. This was found on the TLB around an area of intense burrowing activity.



Figure 4: Another example of a latrine found in section 2 on the TLB.

4.3 Otter

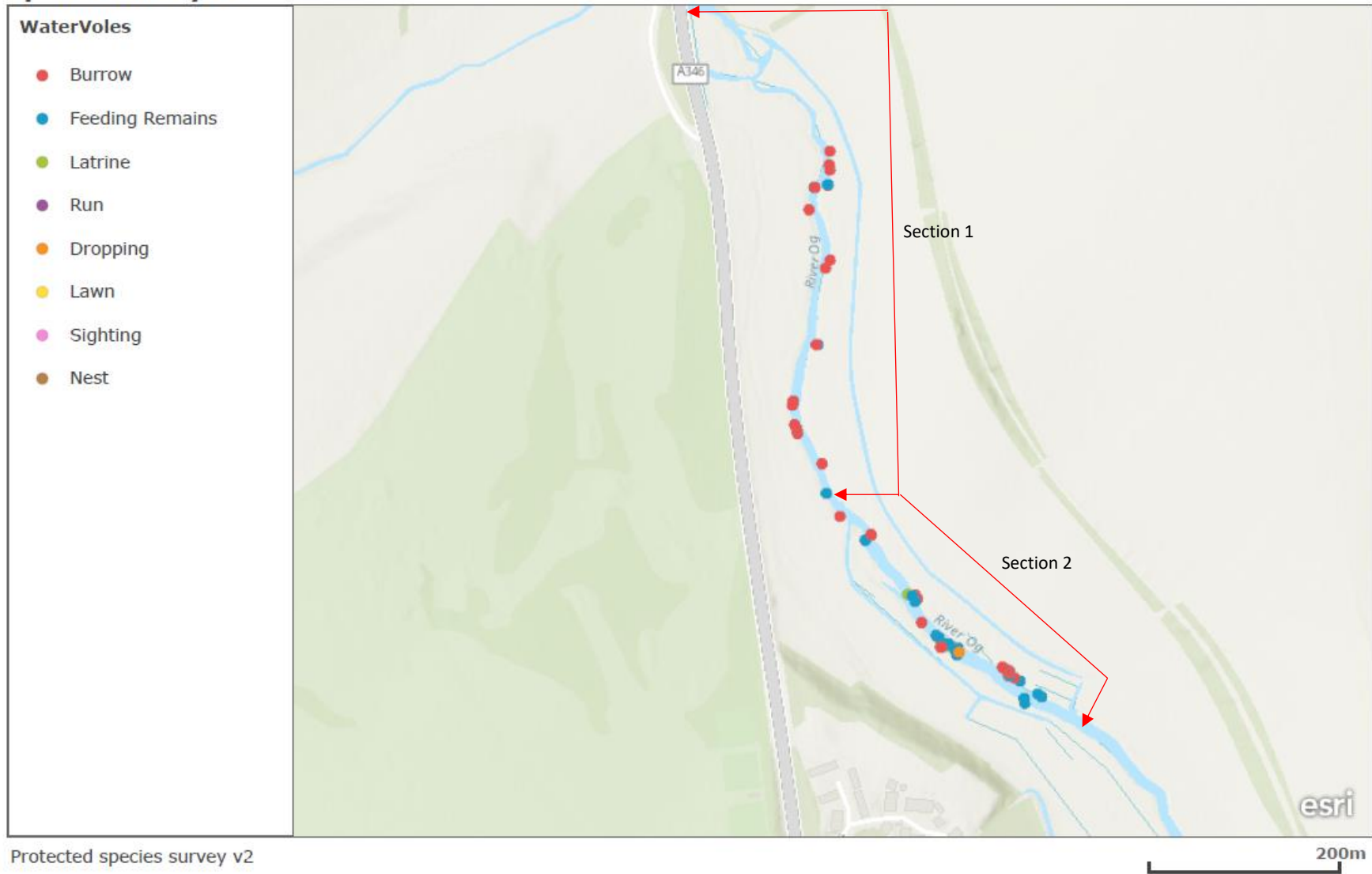
4.3.1 Although no otter activity was observed the habitat was adjudged to be of good quality for otters and is likely to be used by them.

5.0 Conclusions and Recommendations

- 5.1 There is a small population of water voles within the survey area, with the most concentrated activity towards the downstream end of the section. It is noted that the survey was undertaken early in the season and the water voles populations and distribution is likely to expand as the breeding season gets under way.
- 5.2 The limiting factor on this population of water voles appears to be a lack of suitable banks for burrowing. There is extensive availability of food and water for refuge and where suitable banks are present water vole activity is observed. No nests were observed but later in the year these should be a factor in any follow up survey.
- 5.3 The works planned on this stretch of the River Og will ultimately improve water vole and otter habitat. However, there is a risk that the proposed work may result in harm to water voles and the destruction of their burrows whilst it is taking place.
- 5.4 Therefore the proposed work should be carried out under the terms of a Method Statement aimed at minimising the risk of disturbance and harm to water voles, their burrows and otters.
- 5.5 A check for recent water vole activity should be made of the sections where enhancement work is planned. This check should be carried out no earlier than 6 weeks prior to the planned date of commencement of the enhancement work to ensure no water voles or active burrows are present.
- 5.6 If evidence of water voles is found in lengths of the river bank planned for enhancement work, work in this area should not commence/stop immediately and further advice should be sought in relation to this section of work.
- 5.7 Woody debris and all other in channel structures must be positioned away from active burrows with a suitable buffer in place to avoid disturbance and to not obstruct access to water vole burrows (above or below water level). Access points to the river must be located in areas where burrows and active latrines are not observed to prevent unnecessary disturbance.
- 5.8 Where there is a risk of disturbance to water voles the proposed works should be carried out in September or October when water voles are still active but breeding is likely to have finished and young water voles are unlikely to be present in burrows.

5.9 Going forward, this stretch of the River Og should be managed sympathetically with the requirements of the water vole and otter in mind. A cutting rotation may be established for bankside vegetation, so that vegetation is cut on a two year rotation with each bank being cut on alternate years. Cuttings should not be piled on the bankside as this may obscure water vole burrows. It may be possible to experiment with different cutting regimes that leave patches of plants available to the water voles.

Species Survey V2



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Figure 5: Map showing the results of the water vole survey on the 30/03/22. The river flows north to south in this map with north centred at the top of the page.

References

Chanin and Smith (2003). Monitoring the otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. Peterborough, English Nature.

Strachan, R. and Moorhouse, T. (2011). Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit (WildCRU), Oxon.

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All reasonable effort was taken to ensure an accurate assessment of the situation at the time of the survey. However, the absence of recorded presence or sign should not be taken as an absolute guarantee that the site is not being used by a particular species. There is also no guarantee that any particular species will not use the site at any time in the future. Survey results may be weather or seasonally dependent. Any interpretation of legislation is based on our understanding and experience of the law. The relevant statutory body can provide a more definitive interpretation.

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