Water vole, *Arvicola amphibius,* survey at Brook Meadow 18 May 2022

Overview of survey

On Wednesday 18th of May 2022, a water vole survey was carried out with the kind invitation of Dan Mortimer of the Brooks Meadow Group.

The River Ems was accessed via the bank to the south-west of the site and in visible distance of the south end pedestrian bridge, where a floating feeding raft has been installed. This is Section 1 and the habitat here is semi suitable for water voles as there is a lot of bankside vegetation although it is dominated by Hemlock water dropwort *Oenanthe crocata* and common nettles *Urtica dioca*. There are also patches of sedge and yellow flag iris *Iris pseudacorus*. This stretch of the river has mature willow on both sides of the banks and this semi shades the banks and the channel. Despite checking the waterside vegetation, no water vole feeding stations were seen, but 2 tic tac sized faecal pellets were found. These were odourless and had rounded end and therefore were not brown rat, *Rattus norvegicus*, faeces and possibly water vole. Some water level burrow entrances were seen on the eastern banks but did not look well used and no vegetation piles or cut vegetation was seen.

As this channel progressed north, other riparian flora was seen including Brooklime *Veronica beccabunga*, Common reed *Phragmites australis*, Starwort *Callitriche stagnalis* and more sedge species.

In Section 2 the habitat was noticeably denser on the banks and varied with abundant yellow flag iris, sedges, bramble *Rubus fruticosus agg*, water forget-me-not *Myosotis Palustris*, water cress *Nasturtium officinale*, fools water cress *Helosciadium nodiflorum,* and starwort. It is noticeable that there are now shading willow in the eastern banks and the channel and banks receive more direct light. Despite this, and the habitat feeling ideal for water voles with steep earth banks for burrowing, no water vole evidence was found. A nest of moorhen *Gallinula chloropus* eggs was found mid channel although no adults were seen.

In Section 3, just north of the dog access area by the pedestrian bridge and then running along the northern edge of the site, the river here is canalised with wooden boards and eventually bricked. The water here is shaded with a variety of mature native trees and the floral diversity on the banks is lower. Water voles need direct access to the soil to make home burrows and the man-made hard edges to the channel will make this unsuitable for water voles.

Conclusion

While confirming evidence of water voles was absent at this time, at the end of the summer when water vole populations are at their highest, there may be some signs that water voles have moved in. The habitat at Brook Meadow along the banks of the River Ems is good and there would appear to be enough variety quantity of vegetation to support them. There is a monitored mink raft on site and therefore American mink, *Neovison vison,* a significant predator of water voles, appear to be absent. Records of water voles through the River Ems are patchy and there are concerns about the abstraction rates and water levels through the year higher up the river catchment. This may be the reason that water voles are not present, not because anything is wrong on Brook Meadows, but because the River Ems' water vole population levels are low.

Overall recommendations

There are areas where the River Ems is quite shaded by the dense foliage of the willow branches that overhang the water. Some lifting of key branches to let light in on the banks would help to improve plant diversity.

Removal of Hemlock Water Dropwort (HWD) by digging it out along the banks would help to encourage other riparian species to colonise. On the meadow areas where HWD is encroaching, cutting off the flower heads once the flowers have peaked would be advised to slow down seed production.

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Map of site

-------- **River Ems**

-------- **Semi suitable habitat**

-------- **Unsuitable habitat**

-------- **Suitable habitat**

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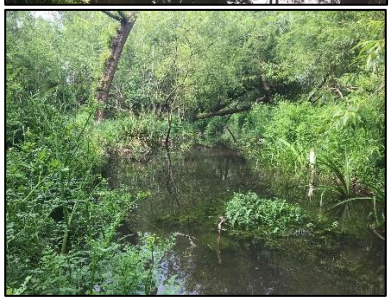
River Ems - photos

Section 1







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Brooklime
Veronica beccabunga


Black headed cardinal beetle
Pyrochro acoccinea

Section 2



Section 3




Red headed cardinal beetle
Pyrochroa serraticornis