Environment Agency: Fisheries, Biodiversity & Geomorphology
Preston & South Ribble FRMS Otter Survey

Introduction

On 16/07/20 the Environment Agency Fisheries, Biodiversity and Geomorphology (FBG) Team set out to conduct an otter (*Lutra lutra*) survey on the river Ribble at Broadgate and Lower Penwortham for Areas 1 and 2 of the Preston and South Ribble Flood Risk Management Scheme (FRMS). It had rained every day w/c 13/07/20 although the weather conditions were dry during the survey. Prior to the survey FBG checked the river levels and they had been dropping since Saturday 11/07/20.

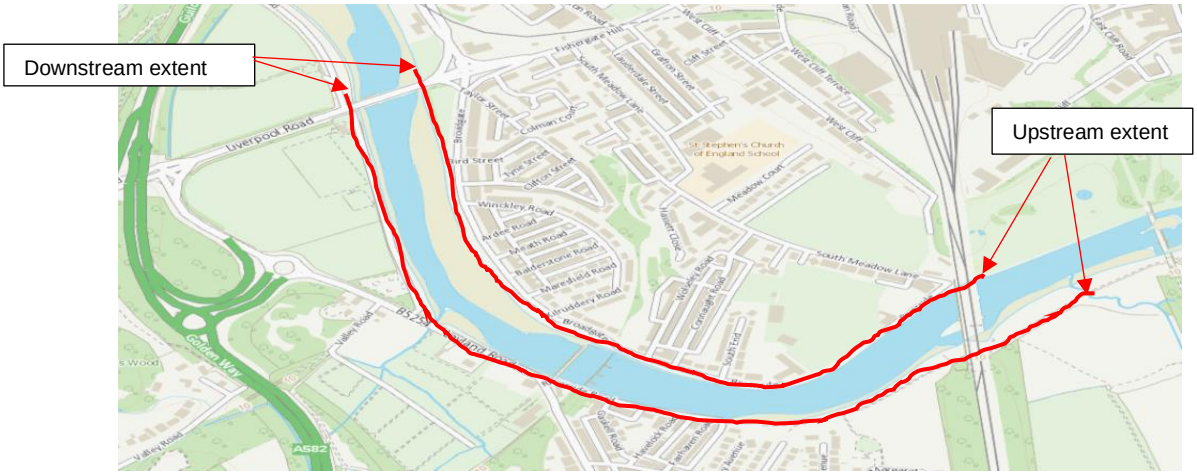
All members of the FBG team that embarked on this survey effort hold an organisational licence for an Authorised Person to conduct such surveys. During the survey attempt it quickly became apparent that access to the river banks was severely compromised. This report therefore documents the findings of an otter habitat suitability assessment/evaluation walkover due the access constraints we encountered.

Scope of Survey

This was not a presence or absence survey for otters. We hold sufficient positive records and almost daily anecdotal and photographic sightings of otters using the study area to confirm their presence. The objectives of the survey therefore was to try to evaluate the importance of this area for otters, looking to identify (old or recent) field signs (spraints, footprints, feeding remains) resting places and potential otter holts, couches and lie up areas.

The upstream extent of the FBG walkover comprised walking 15m upstream of the West Coast Mainline to the east (SD 53554 28460) on the north bank and 155m upstream of the West Coast Mainline on the south bank, to the confluence of an un-named tributary (SD 53660 28435). The downstream extent of the walkover was 15m beyond Liverpool Road (A5254) to the west (SD 52810 28886). Access to the river on both banks was severely compromised with the exception of one location on the south bank at SD 53519 28321. The entire length between the upstream and downstream extents on both banks were walked. The team used binoculars to assess the suitability of the opposite banks where safe access to the river was not possible. The location and extent of the survey area is shown in figure 1 below.

Figure 1 – Extent of walkover / study area



Summary of habitat requirements for Otter:

In England, otters are relatively rare, nocturnal and elusive mammals. Otters are highly mobile and range over large distances, Harris *et al* (1995) estimated that one individual can range over 27km of water in England. Otter diet consists largely of fish, crayfish and amphibians and occasionally mammals, birds and reptiles. Fish make up approximately 80% of an otter's diet so the suitability to support fish and the water quality of the watercourse is important in assessing the habitat suitability for otter.

Recent otter activity has been recorded on the River Ribble (within Areas 1 and 2) and on the un-named tributary upstream of the West Coast Mainline.

Methodology

The Environment Agency is the lead organisation for otters, with the exception of European Protected Species (EPS) licencing requirements which sit with Natural England. FBG adopted the standard EA techniques to survey for otters under bridges. Otters tend to use these areas as resting places and as well as areas to mark their territory and leave spraints on prominent protruding riverine features such as boulders, ledges (inc. bridge structures), tree trunks etc. The attempts to survey were not limited to bridges but involved the entire length of the study area (see Figure 1 above).

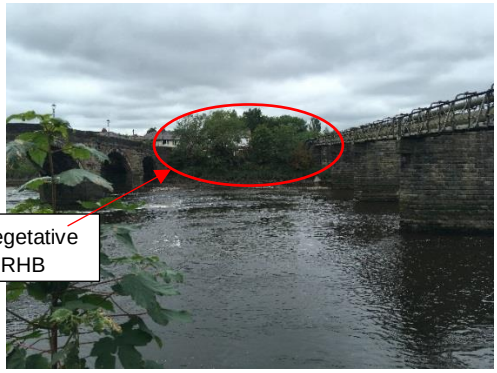
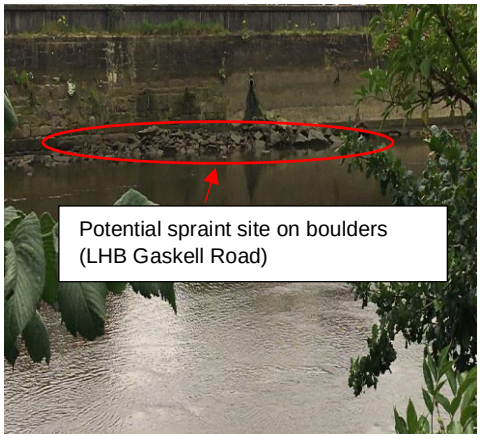
Figure 2 – Target note table

Target Note Number	Detail
1	Broadgate - Penwortham Old Bridge (Surveyors AL-K & GF)
2	Broadgate - between Penwortham Old Bridge and Pipe Bridge (Surveyors AL-K & GF)
3	Riverside Road and Riverside (Surveyors AL-K & GF)
4	West Coast Mainline (Surveyors AL-K, GF, JK & BM)
5	Liverpool Road Bridge (Surveyors JK & BM)

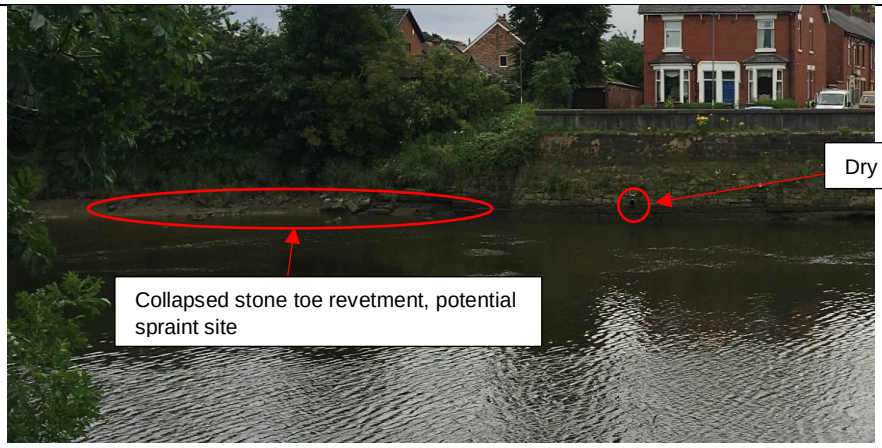
Target Note 1

Name	**Broadgate - Penwortham Old Bridge**
Grid reference	**SD 53052 28320**
	 Exposed gravel shoal Phalaris bed at toe of bank Kyowa filter units
	Ledge on bridge piers   Exposed bedrock and small boulders
Description of potential features used by Otters	Penwortham Old Bridge is listed as a Scheduled Ancient Monument built with block sandstone and incorporates 5 arches. Safe access to survey under the bridge was not possible due to steep vertical banks and deep tidal muds. The phalaris bed and immature trees could provide some vegetative cover for otters.

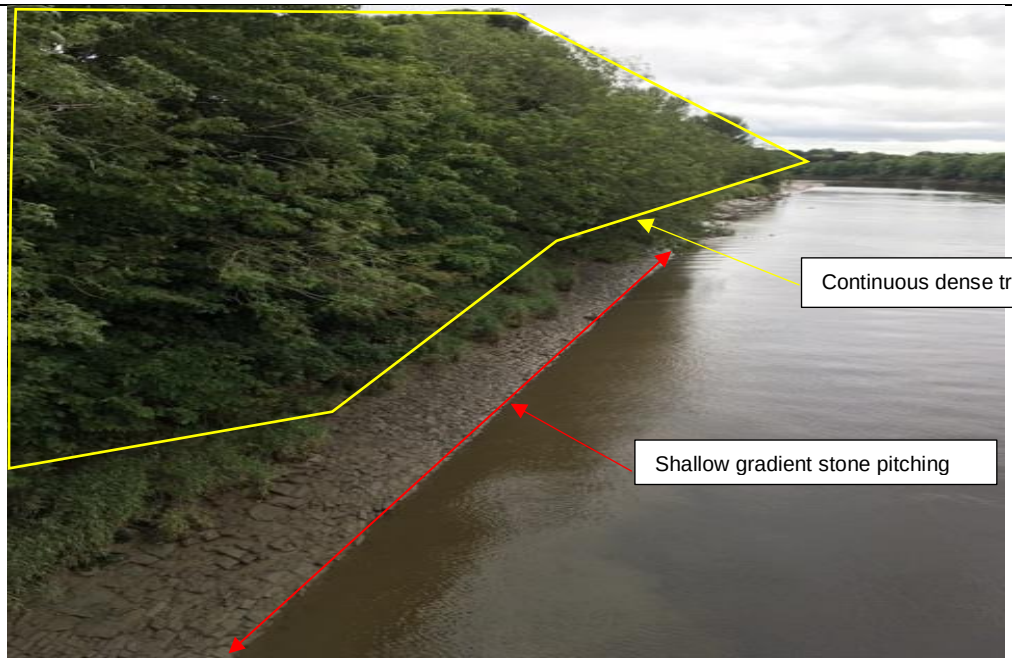
Target Note 2

Name	**Between Penwortham Old Bridge and Pipe Bridge**
Grid reference	**SD 53052 28320 Plates 1 & 2** **SD 53007 28238 Plate 3** **SD 53108 28288 Plate 4** **SD 53070 28305 Plate 5** **SD 53064 28205 Plate 6**
Photos	 Base of sycamore tree offering potential refuge   Dense vegetative cover on RHB  Large wood material at toe of RHB (Wolseley Road / Riverside)  Phalaris bed RHB (pipe bridge). Potential lie-up area  Potential spraint site on boulders (LHB Gaskell Road)
Description of potential features used by Otters	Vegetation on RHB in this location mainly comprises Japanese Knotweed, bramble, scrub and phalaris beds on toe of the bank. There is no vegetative cover on the opposite bank along this reach so otters would favour this location in offering sheltered refuge locations.

Target Note 3

Name	**Riverside Road and Riverside**
Grid reference	**SD 53205 28164 Plates 1 & 2 (LHB)** **SD 53201 28237 Plate 3**
Photos	  
Description of potential features used by Otters	Area 2 on Riverside Road is the only location on the LHB offering suitable cover and refuge for otters within the study area. The redi-rock solution proposed in this location means that all the vegetative cover will be lost to the scheme. On the opposite RHB (Plate 3) we have intermittent tree canopy cover, however this is an area where there will be additional encroachment into the river due to the redi-rock solution proposed in Area 1, a potential pinch point.

Target Note 4

Name	**Liverpool Road Bridge**
Grid reference	**SD 52827 28798**
Photos	 Photo taken from Liverpool Road Bridge (RHB) looking upstream
Description of potential features used by Otters	The area downstream of Penwortham Old Bridge on the right bank is low potential for lie up areas and little potential for holts. Downstream of Penwortham Old Bridge on the right bank (after the existing flood wall) is a line of mature trees along the reach, some on top of the walls. Some areas of scrub, mostly sparse between Penwortham Old Bridge and Liverpool Road Bridge but denser just below Liverpool Road Bridge before the vertical walls by the sea cadets. From the line of trees and shrub it was then sloping stone pitching to waterline, some areas were fringed by reed canary grass and then areas of exposed mud. The area downstream of Penwortham Old Bridge LHB is sheet piling for approx. 30m and further downstream was tree lined with stone pitching to the waterline.

Target Note 5

Name	**West Coast Mainline (WCML)**
Grid reference	**SD 53507 28439 Plate 1** **SD 53609 28404 Plates 2 & 3** **SD 53520 28307 Plates 4, 5 & 6**
Photos	 Arch under WCML (RHB) potential resting / lie-up and spraint site for otters  Upstream WCML looking at LHB offering good quality habitat for otters  Only safe accessible location to survey river bank (LHB)

FBG searching for field signs under WCML (LHB)

Description of potential features used by Otters	This was the only location that FBG could gain safe access to the river channel and banks and was an opportunistic site to spot footprints and other field signs, being dry and having fine deep silt/mud deposits. Unfortunately no positive field signs were observed in this location during our survey effort.

Discussion

Broadgate & Riverside (RHB):

Multiple recent and historic positive otter records exist for the survey area.

Although the majority of the vegetation throughout the survey area between Penwortham Old Bridge to the West Coast Mainline on the RHB is ruderal, it does provide some potential for cover / shelter for otters. The existing walled defences along Broadgate and Riverside area provide both a physical and visual barrier between the river (otters) and the public interface. This reduces the potential for dog walkers and dogs to disturb otters in this location.

Riverside Road (LHB):

The only location on the LHB offering favourable habitat for otters is immediately upstream of the dog-leg in the existing defence where there is dense vegetation cover over ca. 70m length.

Upstream and adjacent to an area known locally as Ribble Sidings there is a footpath that runs parallel (east to west) to the river. The footpath is approx. 8m from bank top at the downstream end to approx. 26m at the upstream end before the West Coast Mainline. With the exception of one mature willow tree adjacent to an outfall there is no dense vegetative cover or walled defence along a 270m length.

Results / Conclusion

We did not find any positive field signs for otters in relation to concluding their recent presence on the day of survey.

In general we consider Areas 1 & 2 to be sub-optimal for otter holts / couches and offering limited potential to provide refuge and shelter. However, we have footage of sightings and anecdotal evidence that otters are using the River Ribble in this location and are confident this area is frequently used for foraging and as a commuting corridor.

Limitations

Every effort was made to establish as complete a picture as possible of otter habitat suitability and to fully record the presence of otters and their resting places. However, the following constraints and limitations were encountered:

- The majority of locations on the north and south banks of the river comprised steep vertical banks and deep tidal muds, this very much impeded our survey effort by reducing access and visibility and therefore there is the potential for evidence to have been under-recorded.

- A bridge over un-named tributary above the West Coast Mainline had collapsed, prevented further access along LHB upstream of confluence with the River Ribble.

- This survey effort was undertaken during the Covid-19 pandemic but had little or no impact by way of survey limitations as the only limitations were physical and visual.

- It had been raining for 3 days prior to the survey effort taking place so any recent evidence of otter field signs could have been washed away.

Recommendations

Given the access and safety constraints which prevented conclusive survey effort of the banks within the study area, FBG recommended additional survey effort by boat at high spring tide.

Boat survey was considered but taking into account the Covid-19 restrictions, it was deemed that this could not be carried out in a socially distanced manner.

To fill some of the data gaps in terms of conclusive evidence, Jacobs used a GoPro camera on a telescopic pole to take a closer look at the banks. This method allowed greater confidence in gathering evidence of potential holt/couche features.

The environmental leads within the project team have discussed the above survey effort by the EA and Jacobs with the LCC ecologist and Natural England protected species licencing officer. NE suggested filling data gaps using a trail camera on features that might serve as potential holt/couche locations. Upon closer inspection by Jacobs it was soon realised that the stone cavity in Penwortham New Bridge (Liverpool Road Bridge) was not suitable as a holt/couche.

FBG recommend that the designs of the new defences are sympathetic to the habitat requirements of otters and retain bankside vegetation (phalaris beds, woody material, scrub, bramble) on the river banks wherever possible. If this cannot be achieved then suitable otter habitat mitigation will be required.

Pre-construction survey checks for otters should be undertaken and supervised by a suitably qualified EcCW

Measures to limit disturbance to otters during construction should be timed to an appropriate time of day (not commence 1 hour before dawn and not finish within one hour before dusk). Any deep excavations should not be left uncovered overnight as this could trap mammals inc. otters. Site operatives should follow these working methods as best practice.

Acknowledgements:

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