

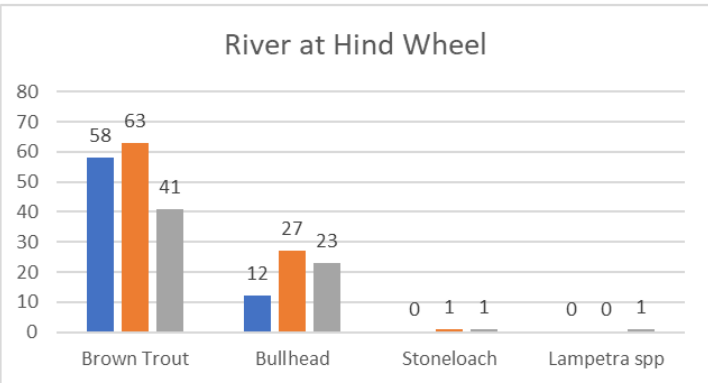
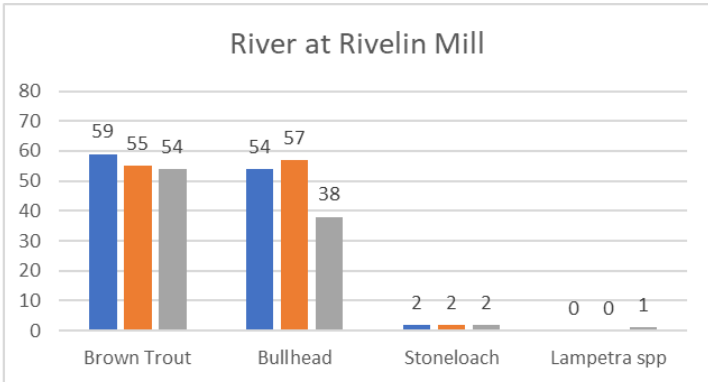
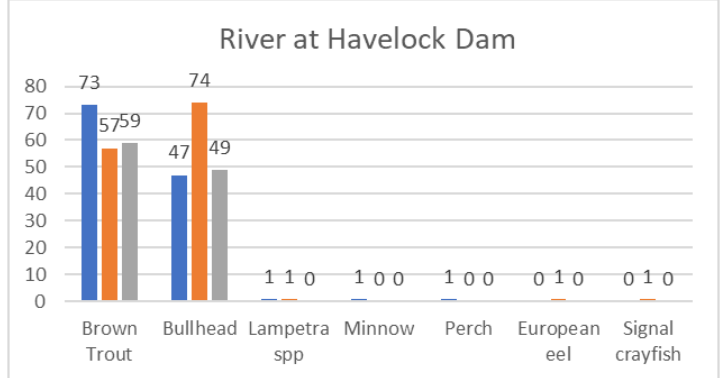
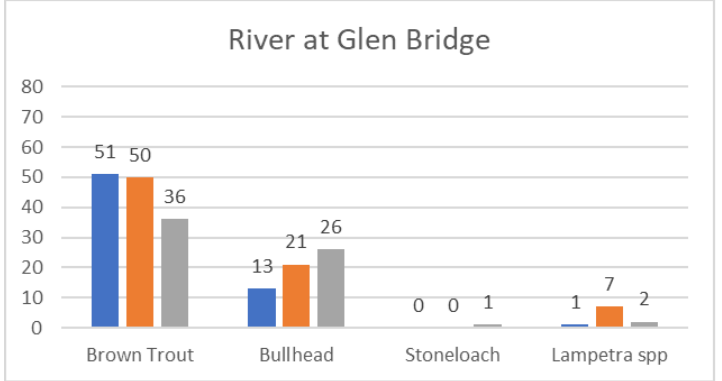
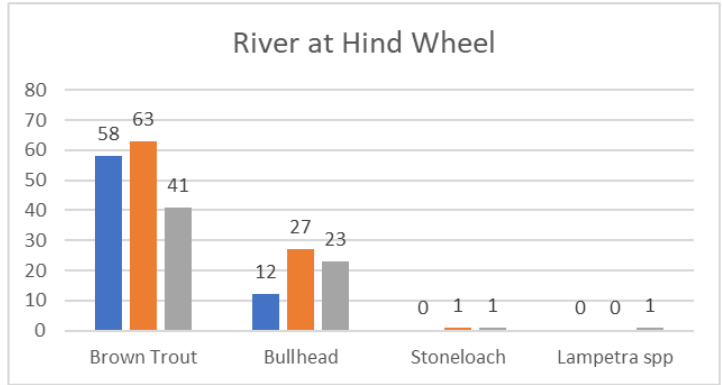
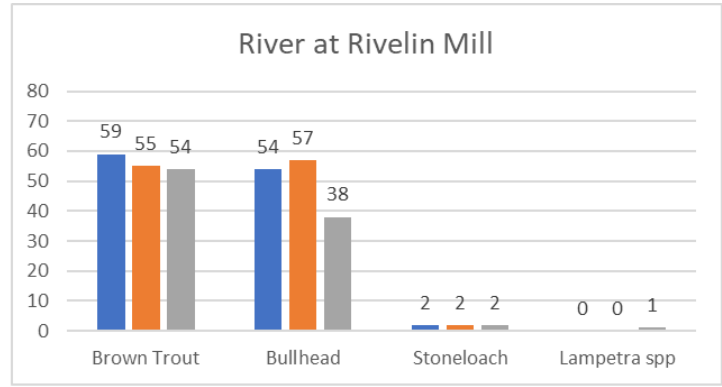
Yorkshire Water Fisheries

Yorkshire Water has kindly provided us with their fisheries survey records for the years 2020, 2021 and 2022 from four sites along the River Rivelin. The surveys were done using electrofishing*, which stuns the fish so that they can be caught, counted and measured. The method favours the larger fish such as brown trout, so the numbers of smaller fish such as stone loach, lamprey (Lampetra sp.) and minnows, were likely to be under-estimates of their populations.

The results are shown in the graphs opposite and show good news for the Rivelin fish populations. The numbers of brown trout and bullhead caught suggested a healthy adult stock of fish and were as expected because the Rivelin provides ideal habitat. There was also a good mix of other species including stone loach, which is generally quite susceptible to poor

water quality and requires clean and well oxygenated water and riverbeds to spawn; they are also eaten by the larger trout.

A single eel was caught, in 2021, in the river near Havelock Dam. The individual was quite small (140 mm) meaning that it was quite young and had only recently migrated upstream. Unfortunately, Signal Crayfish are present in the lower reaches, but it appears from the data that they have not made their way far upstream.



The River Rivelin is home to populations of three conservationally-important fish species. **Brown Trout**, of which there is a strong population in the Rivelin, is classified as a Priority Species in the UK Biodiversity Action Plan (i.e. UK species most threatened and requiring action), while **Brook Lamprey** and **Bullhead** are included on lists of species important within the EU.



Bullhead

It is thought that the Rivelin population of Brook Lamprey is now the only known population in the South Yorkshire, having disappeared from the other rivers. This population may have survived since pre-industrial times, becoming isolated from the rest of the river due to the construction of weirs and dams.

The lamprey is a primitive, jawless invertebrate that has two life stages: the juvenile stage (ammocoetes) can last for a few years – during this stage they burrow in patches of deep silt and feed on detritus, and can be identified by their brown colour and lack of eyes and poorly developed mouth. To reach the adult phase, the ammocoetes go through a phase of metamorphosis where they develop eyes, a mouth and turn silver. For Brook Lampreys their life cycle is similar to the mayfly



Brook Lamprey

– the adult phase is only very short as they will try to spawn shortly after metamorphosis and then die. Their spawning season is April–June so the River Rangers might like to look out for them at that time.

* **Electrofishing method:** A 50 m section of river is selected as the survey site and nets are placed at the upstream and downstream limits to stop fish moving in and out of the site during the survey. The nets are placed in the same location every year to ensure the same site is surveyed. The 50 m section is then electrofished three times, with the fish from each run being held separately. The fish are then counted and returned to the river after the final run. The purpose of the three runs is because it is rare to catch all the fish first time around.

Sue Shaw, with thanks to Dr Tim Stone Senior Environmental Scientist at Yorkshire Water, who also provided the photographs