

Electric fishing survey results

Electric fishing is one of the tools which we have adopted to quantify improvements made to our river. Electric fishing involves the use of an electric field, created by an anode and a cathode operated by a highly trained member of staff, and when activated in water, this momentarily stuns the fish, they can then be captured in a net for species identification, counting and measuring.

We managed to successfully complete the majority of our electric fishing programme in 2023 despite some difficult river conditions. Here is a quick summary of some successes and relative disappointments so far, and most relate to migratory salmonids. It should be noted that we also record other SAC species such as bullhead (*Cottus gobio*) and brook lamprey (*Lampetra planeri*):

Upper Alwen: Electric fishing has demonstrated that adult salmon can ascend and spawn within 50 metres of the culvert. Fishing above the culvert was poor / moderate for trout as they have only had a short time to utilise the improved area of spawning following gravel introduction in Autumn 2022. Culvert alterations in 2023 will allow salmon to spawn in this area with huge benefits.

Upper Brenig: Brenig surprised us with our first fishing in 2021 in that trout and salmon numbers were moderate. This has continued post interventions with positive results. Boulder and gravel introductions in two areas have increased the area available for adult spawning and juvenile habitat, and we expect the numbers in the area to increase in future.

Tryweryn: Results from 2023 have improved significantly from 2022 results, which were slightly disappointing despite the work to improve the spawning available in 2022. 2023 results included one excellent site that achieved a grade A, moving from a grade E in 2022.

Main River: Electric fishing took place in 2022 and 2023 at two locations on the Dee where we have introduced boulders, but high flows throughout 2023 has unfortunately prevented post-intervention fishing. These sites will hopefully be done in 2024 to investigate any changes.

Upper Ceiriog: Three large sites on the upper river have demonstrated stable and fairly healthy trout populations (grade A to C) post intervention, but salmon are not doing well (C to E). The Ceiriog is a river that predominantly has 'grilse' spawning in it. Grilse are salmon that have spent one winter at sea, and are approximately 3-9lb in weight. Numbers of grilse across their European range have dropped dramatically over the last few years, and we have seen a similar reduction on the Ceiriog. Despite improvements via fencing, boulder introductions, etc, these poor results are likely to continue until adult salmon (grilse) numbers improve and the project addresses interventions further downstream (such as Brynkinalt and Chirk weirs).

Lower Ceiriog: At Brynkinalt, large scale in-river interventions including boulder introductions, and fencing schemes to restrict livestock, have stabilised juvenile salmon numbers (grades B to D) and maintained lower abundance trout stocks (C to E). Bullhead numbers remain strong within this river section.

Ceiriog tributary - Nant Gwryd: This small tributary had two significant barriers to fish migration which were addressed in 2022. These will undoubtedly assist sea trout and salmon ascending the river in future and may raise the current good status of trout (grade B) further. No salmon were captured in this narrow, steep tributary but we will keep monitoring in future.

Morlas Brook: Another Ceiriog tributary that has shown considerable improvements since the removal of a concrete ford at its downstream end. At the control site, grades remain very similar over the four years of electric fishing for salmon and trout. However, juvenile salmon are now present at the three sites upstream of the barrier removal which is a major success.