

## Geography Report

Jane Harrison

In June our speaker was Phil Ramsden, a Durham University geography graduate, who works in Cumbria for the Environment Agency. He is a Fisheries Technical Specialist and spoke about his research into salmon management on the River Derwent.

Young salmon, or smolts, are very vulnerable when they migrate downstream. Phil described them as “Nature’s Mars Bars”, because at 6 inches long they make a very tasty snack for larger predators. Man-made structures, such as weirs and hydro-electric power dams, also create major obstacles to their movement. Climate change is increasing water temperatures and floods, as well as periods of exceptionally low flow, are more frequent.

Adult salmon, which need minimum depths, clean gravel and well-oxygenated water in which to spawn, face changes to their habitats. Silt, sediments, fertilisers, and pollutants all have a detrimental effect on fish populations. Salmon catches on the River Derwent, as measured by rod fishing, have plummeted since 1993. Returning salmon are now smaller in size, which may reflect changes in marine environments as well.

Phil has been involved in a three year study to tag smolt and record their movement past monitors placed at strategic points downstream. In 2020 only 8 of 100 fish tagged upstream reached the sea. This loss was much worse than expected so the team even experimented with releasing the smolts further downstream. There were better survival rates in 2022. The research highlighted some of the hurdles faced by the fish. Even navigating across Lake Bassenthwaite proved difficult, with one fish taking nearly 6 days and travelling 80 kilometres! One of the biggest problems however was the Yearl weir. There is a salmon leap for fish moving upstream but no provision for the smaller fish swimming downstream.

There is now an urgent need to act on the data collected. Fortunately, improvements are already proposed at the Yearl weir to make it easier and less stressful for the down migrating fish.

Phil’s team has also worked with other research projects collecting data at sea. It has been possible to trace the passage of tagged salmon on their journey towards Greenland. One was tracked as far away as the Outer Hebrides before its transmitter battery faded. Worryingly some salmon appeared to head towards the commercial fish farms off Carradale, Argyll.

Phil’s talk gave rise to considerable discussion afterwards. Several people raised the issues facing fish on the River Tees. Gerald recommended reading “Is a River Alive?” by Robert Macfarlane.

Next meeting: Thursday 21<sup>st</sup> August. The Witham. 2pm. Tim Meacham will continue his talk on Teesdale railways and Gerald Blake will talk about Teesdale maps.