

Restoring rivers for people and wildlife

Since 2009 I have had the pleasure of managing the hugely successful and multi award winning Cumbria River Restoration Programme. Things have changed incredibly since the beginning when river restoration work mainly consisted of light touch low risk interventions, such as woody debris implementation or minor tweaks to the river channel. We are now delivering large scale restoration projects, as well as those still very important low risk measures on a grand scale across all catchments within Cumbria.

This year alone we have delivered over 12km of river improvements or restoration as well as contributing to the restoring of 2.5km of the high profile River Keekle project. This involved the removal of tons of plastic from the river channel. We have also delivered over 25 hectares of habitat improvements by better connecting rivers to their flood plains in turn contributing to Natural Flood Management. To aid fish migration, three weirs have also been removed so far this year which will help improve access to vital spawning habitat for all fish species. With many more planned projects throughout the year and beyond it's certainly an exciting future ahead!

The River Restoration programme started as a partnership between the Environment Agency, Natural England and the 3 Cumbria Rivers Trusts (Eden Rivers Trust, West Cumbria Rivers Trust and South Cumbria Rivers Trust). Using mapping work of the 3 main rivers in Cumbria (the Kent, Eden and Derwent) we were able to identify potential opportunities where we could deliver river restoration works that could benefit both people and wildlife. The programmes main aim at that time was to deliver projects that addressed the water framework directive and protected areas that were at risk of deterioration. The team set about getting work done on the ground, which required the engagement of local landowners and other stakeholders. By delivering low risk demonstration projects we gained a great deal of experience and confidence, which has enabled us to increase the scale of our ambitions over the years. It also gave us some vital clues on how our rivers react to these interventions, after being choked and constrained in modified channels for decades.

In 2015 Cumbria was devastated by the impacts of Storm Desmond, which resulted in extreme damage to both the environment and local communities on a huge scale. Something interesting was observed in the aftermath of this catastrophic event, the river restoration projects delivered prior to Desmond stood up well and proved extremely resilient to the exceptional impacts of this major event. In fact only weeks after Storm Desmond the watercourses where interventions had been delivered, soon returned to as they were prior to the event. The most important observation was the flood risk benefits that some of these projects have provided, by allowing the rivers to better connect to their natural flood plains, this helped to safely store much of the increased volumes of water. What was also apparent post the event is how quickly water re-entered the channel and also how quickly the surrounding

land dried, allowing for normal farming practices to resume not long after. Subsequently this programme is not only providing significant benefits for the environment but on a larger scale has the potential to make a real difference to the flooding of communities downstream. As such every project now not only looks at the positive impacts of biodiversity and natural hydromorphology but also the potential flood risk benefits that could also be realised.

Alongside our River Restoration programme the Natural Flood Management (NFM) Programme was established, which aims to use nature based solutions to help reduce flood risk to our local communities. The Cumbria River Restoration Strategy and the NFM programmes now work closely together, both realising that they can deliver the objectives of each programme, sometimes within one scheme or project. This helps to ensure we choose our project locations wisely and ensure every pound of investment focusses on safeguarding the environment and protecting our communities. We have delivered some truly awe-inspiring projects so far and we really want to continue to make a big difference to the environment and our communities by delivering this work on much greater scale. The Cumbria NFM programme is now entering its final phase and is on target to deliver over 300,000m³ of flood water being held back, in turn reducing flood risk. The NFM programme will also see 500 hectares of restored or created habitat improvements, nearly 50km of rivers improved and enhanced over 1,000 hectares of soil improvements.

Climate change isn't going away and river restoration work, along with many other interventions can make a real difference. But to make a 'real' difference we need everyone to pull together, from local communities, landowners, farmers and government organisations to work even better together into the future. The recently released Environment 2025 plan gives us a real steer and directive on the type of work that we and partners need to deliver collaboratively in the future. It definitely feels like things are now moving in a positive direction with more and more organisations and local charities coming on board. However more needs to be done in order to see a real change to the environment, climate change and our way of life and our local communities. It is certainly an exciting time moving forward and I personally look forward to the benefits this brings.

Further information:

My name is Olly Southgate and I have been at the Environment Agency for 18 years now. I started my career in the Northeast supporting the fisheries monitoring programme in Yorkshire, on rivers like the Ouse, Derwent, Wharfe and Esk. From there I moved over to the Northwest to take on a role as an Ecological Appraisal officer, delivering the monitoring programme in Greater Manchester and Cheshire, as well as the Mersey Salmon programme. After this I moved back into a fisheries role taking on a position as a Senior Fisheries officer and area Fisheries Project Lead. After successfully delivering a wide range of fisheries and angling projects I was asked to take on the role as a river restoration project manager for the whole Northwest. So here I am now still delivering a wide range of projects in the Northwest, but mainly focussed in Cumbria and Lancashire. In my time at the Environment Agency I have been fortunate to deliver some of the most challenging and inspiring

environmental projects delivered in the UK, and received conservation and environmental project awards, including most recently the River Champion 2020 award. I am a keen sharer of 'lessons learnt' and have established a European River Restoration Community, a podcast series on river restoration and delivered various conferences and workshops over the years, in order for us all to learn more from each other and deliver greater things for the environment and our communities in the future.

- To learn more about the work we have completed have a listen to Salford University podcasts that we have been involved in. They contain some really lively debate from people from a wide range of backgrounds on the current issues and more importantly some useful information on the techniques we can all do to make a real difference going forward – <https://soundcloud.com/universityofsalford/managing-floods-in-a-changing-climate-podcast-1>
- Swindale Beck River Restoration Project – <https://www.youtube.com/watch?v=fmzjRJUi9UY>
- River Keekle River Restoration – <https://www.youtube.com/watch?v=7o8BJJhWxC4>
- Ennerdale Mill Dam Removal – <https://www.youtube.com/watch?v=ryWc-8ZAEjk>