

Restoring river habitats

We work with and restore
natural processes for
resilient river environments
and enhanced biodiversity.

Mott MacDonald's integrated and holistic approach is applied to all aspects of river restoration projects, from feasibility to construction. We successfully design and implement schemes collaboratively, engaging with a broad range of clients and stakeholders, including water companies, the Environment Agency, The Rivers Trust, lead local flood authorities and local land owners and communities. We can identify and deliver opportunities for habitat enhancement to meet regulatory requirements and achieve benefits, environmentally, societally and for our clients.





Improving fish passage and protecting biodiversity

Project

AMP6 River Restoration Framework – River Wandle, River Wye and Childrey Brook

Location

Thames region, UK

Client

Thames Water

Expertise

River restoration design, ecological surveys, stakeholder engagement

Opportunity

As part of Thames Water's AMP6 final determination from Ofwat, funding was designated to carry out river restoration, as required by the Environment Agency's National Environment Programme. We were commissioned to undertake river restoration feasibility studies and design, through to construction on the rivers Wye and Wandle and Childrey Brook. This programme is being delivered in liaison with local stakeholders and the Environment Agency.

Solution

We worked collaboratively with Thames Water, the Environment Agency, local councils, The River Trust, sub contractors and community groups to develop solutions to improve fish passage through the existing structures in combination with river channel improvement works. These included the design of in-channel improvement works, modifications to two renovated mill structures and the removal of a weir. These structures were obstructing fish migration and impounded the watercourse over large sections of these globally rare chalk streams. Our engineers and ecologists worked closely to undertake all ecology surveys, which included camera trapping to identify protected species, animal movements and active holts. The camera trapping identified that otter, water voles and European polecats were frequenting these sites, so mitigation measures could be developed early in the design stage.

Outcome

Our outline design solution was delivered under budget and was well received by the client and the stakeholders. Early collaboration with the appointed contractors progressed the detailed designs to ensure constructability, and access and safety were all considered throughout the design stage. We are working closely with specialist contractors to support the construction of these schemes in 2019, delivering habitat enhancements at the three locations.

Enhancing habitats by mitigating abstraction impacts

Opportunity

Improved flows and hydromorphological improvements were needed in Meece Brook to mitigate the impact of low flows due to water abstraction. As part of the AMP6 National Environment Programme, our client was required to provide enhanced habitats. As well as abstraction of the public water supply, the landowner had impounded the stream to create habitat for wintering and wading birds but, despite good intentions, this exacerbated low flow problems.

Solution

At the start of the project we reviewed all information about the stream and flow issues, and visited the site across different seasons, ensuring a strong understanding of the physical, natural and man-made pressures on the river. Careful collaboration with the Environment Agency and the landowner allowed a solution to be found to meet everyone's objectives. Our design restores the low flow function and continuity of flow in Meece Brook, maintains connection with floodplain habitats, and features a variety of self-sustaining in-channel, bank side and floodplain habitats.

Outcome

Positive engagement with the landowner was key to the success of this project. Maintaining a collaborative approach, we developed trust with the landowner and we ensured that the Environment Agency was happy with our final detailed design by working closely with it. We partnered with a specialist contractor, Five Rivers, to finalise the detailed design, and works were completed on site in early 2019, with a monitoring programme in place to ensure the scheme delivers its full potential.

Project

Meece Brook restoration detailed design

Location

Staffordshire, UK

Client

Severn Trent Water

Expertise

River restoration design, collaboration with stakeholders, construction supervision, detailed geomorphological and ecological investigations



Supporting ecosystems with river form and function improvements



Project

River Camel Restoration

Location

Cornwall, UK

Client

Environment Agency

Expertise

Catchment-wide river restoration feasibility assessment, initial options appraisal, river restoration concept design

Opportunity

We were commissioned to appraise 13 sites within the River Camel site of special scientific interest and special area of conservation, where physical modifications – including weirs, bridges, croys and bank protection – have an impact on the natural dynamics of the river system and the ecosystems it supports.

Solution

We completed feasibility studies at all sites to identify and assess options for restoring natural river processes and removing structures. At most of these, there was potential to improve the physical condition of the river and achieve conservation objectives. Options included removal or alteration of bank protection, bridge modification or replacement, weir modification or removal, or the improvement of fish passage. We considered the ecological and geomorphological impact of altering the river alongside the likely costs of each solution to develop a short list of preferred options and concept designs.

Outcome

At each location, we have provided a clear steer on what can be achieved from river restoration, including how schemes can be delivered in the most effective and proportionate way, and which organisations are best placed to fulfil the work. These schemes are expected to progress to outline and detailed design and be delivered by project partners as part of an EU-funded Water for Growth project.