

River Dour Partnership

Chalk Streams

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Chalk streams are a rare and valuable habitat, often referred to as the equivalent of England's rain forests or Great Barrier Reef.

There are fewer than three hundred chalk streams in the world; England has 224 of them. That is 85% of the global total. Thus, our short four mile River Dour is ecologically important.

Most of our chalk streams are in the south and east of the country, stretching from Yorkshire through East Anglia, the Chilterns, Kent, Hampshire, and Dorset. They vary in size from the stately River Test in Hampshire, to diminutive little brooks you can almost hop over and dozens of smaller springs, rills, and flushes.

A chalk stream is broadly defined as one that derives most of its flow from chalk-fed groundwater, and it exhibits – in varying degrees depending on the particular geology of a given valley – the ‘classic’ chalk stream characteristics of alkaline, crystal-clear water, flowing consistently and equably over clean gravel beds. The water is very pure, rich in minerals and remains at a fairly constant temperature year-round.

In the mid-1800s, Thomas Huxley, a pioneering biologist, was sent samples of the porridgy Atlantic sea floor. Chalk, Huxley discovered, is the fossilised remains of billions of infinitesimally small creatures, which swarmed in warm, shallow seas millions of years ago. When these single-celled creatures died, they

rained down to the ocean floor, settling and compressing over time into chalk. As the planet cooled its seas retreated and the sea beds became land. Then, for millions of years ice, wind, rain, and the glaciers of the most recent Ice Age re-arranged and shaped this landscape into the great belt of chalk hills we call the North and South Downs.

When rain falls on these hills, it sinks into the ground – as if into a sponge – through fissures and cracks, or into the body of the chalk itself, turning the hills into underground oceans of trapped rainwater. Then begins that water's hidden journey: a drop of rain might travel five miles, or fifty, under the earth; it might stay down there five months or five years or five centuries. The subterranean topography that determines exactly where the water goes is immensely complex, almost unknowable; what we do know is that here and there, in a wet furrow in a meadow, under the roots of an ancient tree, or in a rook-filled copse on the edge of a hill, that water re-emerges as springs – the source of chalk streams.

What flows from these springs is no longer plain rainwater but chalk-water: cold and clear, and mineral rich. Because they are spring-fed, they are naturally buffered from the immediate impact of rains and drought. This steady flow of cool, clear water in meandering, gravelly channels, creates spectacularly diverse and fecund ecosystems.

Chalk streams are a quintessential part of the English landscape. These unspoilt

gentle, malleable rivers are like a watery Garden of Eden, home to an incredibly special array of fauna and flora; the aquatic plants are the 'hedgerows' of the river, providing the in-stream habitat on which everything else depends.

We can see in the Dour lush beds of submerged plants, such as watercress, water crowfoot and water star-wort whose flowers are held expectantly above the water's surface, attracting bees and other pollinating insects in summer. Plant diversity and good water quality support many invertebrates and fish.

They have been harnessed and lived with shaping and shaped by human history in one of the most used landscapes anywhere in the world. Think of Roman villas, mills, the medieval priories and holy houses, castles, the ornate Palladian parks and gardens, fisheries, the Georgian water meadows. Houses were built with it and blackboards written on with it.

More or less every metre of every chalk stream has been modified to a degree, often many times. They are very low-energy systems and are mostly incapable of erasing a modification once it has occurred, so the modifications accumulate.

Some are buried underground. Many are



River Dour Bridge Near The Red Lion Pub

polluted. To our shame most of the really debilitating changes have occurred in the last 50 or 60 years. Before that time, they were certainly much-used river systems, but our relationship with these rivers was, to a large degree, symbiotic.

Now the range of threats is diverse, and most are difficult to overcome in a busy, valuable landscape that supports farming and industry, people, and businesses.

They are under immense pressure, flowing through one of the most urbanised, industrialised, and populated parts of the UK. All these streams are impacted in one way or another by the activities of people.

We depend on chalk streams for public water supply and have leant heavily on the resources of the underground body of water that feeds these streams. And yet every litre of water we take out of the aquifers – and we take billions and billions of litres to irrigate our crops, flush toilets, run our taps (up 70% of the public drinking water supply in the south-east of England) is water lost to the natural environment. At least until we put it back.

A chalk stream's shape, form, and connectivity (its 'geomorphology') is the backbone of its biodiversity. A physically intact, natural, and stable river is far more able to tolerate pollution and abstraction than a heavily modified one. The confined, straightened, impounded chalk stream cannot cope with floods and droughts in the same way a natural river can. Pollutants can more easily get into a modified system without its natural buffers, and once there tend to become trapped in a river that lacks its natural physical function – meandering and flooding. In-stream structures, such as weirs and sluices, also do damage as they

prevent re-colonisation of wildlife after extreme events, and prevent inappropriate sediment being removed from the river, and are also barriers to fish passage.

Tackling this issue is imperative to ensure our chalk streams are healthy and resilient to drought, pollution, and climate change.

The Catchment Based Approach (CaBA) is an inclusive, civil society-led initiative. They work in partnership with government, local authorities, water companies, businesses, and others, to maximise the natural value of our environment.

The Chalk Stream Restoration Working Group, created by CaBA, has put forward a set of recommendations to protect and restore England's rare chalk streams.

The strategy outlines the threatening current issues in England and what must be done to protect the three key indicators of ecological health:

- Water quantity
- Water quality
- Physical habitats

It recommends enhanced status for chalk streams to drive investment to prevent pollution and over-abstraction, as well as restoring habitat to boost biodiversity.

So, when you see work parties – White Cliffs Countryside Partnership, Environment Agency, Southeast Rivers Trust – remember they are doing their best to reduce pollution (including litter), remove obstacles, create fish and eel passes, and enabling a more vigorous (cleaning) flow. Spend a little time with them; ask how the river is doing and, maybe, what can be done by the community to enhance our wonderful watery Utopia.



Brown Trout

Dour Activities with the White Cliffs Countryside Partnership

Winter is a quiet time and volunteers, and children's activities are mostly on hold until April when the fish have stopped spawning and the river can be explored once again.

There is a huge need for education about chalk streams, so Our Finest Dour has recently held a series of webinars in partnership with Kentish Stour Countryside Partnership on the Dour and Stour rivers which focus on the importance of them.

Also held was a children's educational walk in Half Term.

And finally...

Look out for the River Dour (and other local Dover sites) that appeared on Channel 5 Kate Humble's Coastal Britain in early February. This will probably be available on the internet Catch-Up service.



River Dour at Ladywell