The voice of the River Darent
DRiPS

No 37 Spring 2022

Does it rain enough?

In the south east there is 50 per cent less rainfall than the rest of the UK. By 2080 water companies expect the population in our supply area to increase by nearly half – that's a million people all needing water for their vital every day needs.



But water companies cannot make any more water. And if rainfall patterns change they will probably be more erratic. We all the need to conserve water to protect our environment and wildlife and grow the crops that we may no longer be able to import.

OUR WATER COMPANIES COLLABORATE

The map shows the area of SE England covered by six totally independent water supply companies: Thames, Affinity, SE Water, SES Water, Southern Water and Portsmouth Water.

Between them, they draw water from 28 different river catchments and 70 chalk streams and every day they supply six billion litres of water to 20 million people and 2 million businesses. That needs some planning. How might things change in the next 50 years?

The group, WRSE, (Water Resources South East) have agreed to ignore company boundaries and work together to consider how to handle climate change and population



growth over the next 50 years. There are six such regional groups in the whole of England.

Together, they promise to reduce abstraction in all our chalk streams, fix 50% of leaks and provide water for even more houses which we expect to be required to build. How? Water will be transferred from the Severn to the Thames and there will be new reservoirs and recycling plants. And we will all be asked to use water much more wisely.

Can you identify this plant? Where would you look for it? See inside..



If the Target is 120 why do most of us score 150? or maybe even 4000?
Puzzled ?
See back page..

DRiPS Meeting
17th May Shoreham
The Quadrangle
Listen to speakers about how we can all help to look after the Darent Valley

See back page

www.darent-drips.org.uk email: darentdrips1985@gmail.com
Facebook: "Darent River Preservation Society"

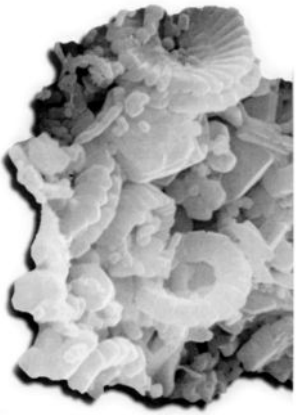
Chalk streams and hidden groundwater - our precious assets

Did you know there are only 200 chalk streams in the entire world – one of which is the River Darent?

It rises at Westerham and meanders across flinty gravel beds to Dartford, creating a unique water ecosystem supporting a particular diversity of plants and wildlife that is characteristic of chalk streams.

We need to protect this precious natural resource. Threats facing the river include over-extraction, climate change, pollution and invasive species like signal crayfish and Himalayan balsam. That's why the Darent River Preservation Society (DRiPS) exists – founded in 1985 when stretches of the Darent ran dry as here at Franks Lane near Horton Kirby in 1991.





Photograph taken with an electron microscope of a sample of the Chalk showing the tiny shell fragments of algae which make up most of the rock. The porosity is about 45%.

UK Groundwater Forum

DRiPS acted as a lobbying organisation and a focal point for all the organisations and individuals interested in preserving and enhancing the river. We achieved great success in raising awareness of issues affecting the Darent – in particular, negotiating reductions in water extraction by national water companies and see our role as continuing to act as the voice of the river.

While stretches of the river are hidden from view, its vast underground chalk aquifers supply drinking water to much of South London and Kent - a fact that is largely unknown to most householders.

SE England has the highest density of housing but the lowest rainfall in the whole country. With so many houses continuing to be built in this overcrowded corner of England, there is an ever-present threat that over-abstraction will endanger nature's arteries once again.

How can you help?

Join us and keep in touch with the issues and the successes. Find your local stretch of the Darent or one of its little tributaries on a map and go for walks. Get involved with volunteering activities with NWKCP. Appreciate and value our unique natural resource.

Take a look at our website www.darent-drips.org.uk. See below for joining instructions.

DRiPS vice-chair Trevor Carman, who looked after the Darent with the NRA and the EA, lives in Shoreham.

Up until the end of WWII the Darent had a healthy flow which supported working water mills and commercial watercress beds along its length.

Our three gauging stations, at Hawley, Lullingstone and Otford were not constructed until the 1960s so we don't know the exact flows but archive material indicates a minimum base flow of 1.5 cubic metres/sec.

The equivalent figure these days is about 0.5 cubic metres/sec.

In those days, as now, the villages along the Darent obtained their water supply from the chalk aquifer. But it had little effect on the river flows due to low population density.

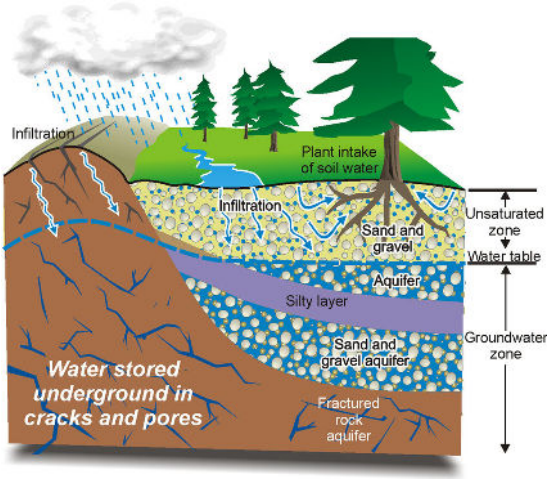


After the war ended things began to change rapidly with every village experiencing a huge increase in house building. The new houses came with indoor bathrooms and hot and cold running water which meant goodbye to the weekly bathtub in front of the open fire and hello to the daily bath or shower for the whole family. During the next few decades the "modern" kitchens would be equipped with washing machines and dishwashers, not to mention gardens and lawns that needed watering and cars that needed cleaning.

This all meant that the demand for water went through the roof and the old Victorian Pumping Stations were replaced by new pumping stations capable of drawing huge volumes of water from the aquifer. Whole stretches of the river bed dried out for months on end. It could happen again.



We rely on winter rainfall to recharge the aquifers for the coming year. Whenever we have two consecutive dry winters, our water companies start to get nervous. With a warmer climate, summers will get hotter and wetter and winters may well be drier.
As every gardener knows, it takes a lot of rain for it to really it soak into the soil, so it can take months or years for rain to reach some of our aquifers. Maybe it's time to consider how to use another water butt to save greywater for the garden?



The sparkling Darent reborn



In Central Park, Dartford the Darent is once again fast flowing, bubbling and frothing, no longer encased in a straight concrete culvert, but open and wild, careering in great curves with grass-covered banks.

Two branches of the river run through the park at Dartford. The eastern course was originally designed as a flood-relief channel but had evolved as the main river course due to the silting of the western course and the difficulty of maintenance. Before work to restore the western course began, temporary coffer dams were built to prevent further flow and all remaining fish were restored to the still-flowing eastern course.

A joy for local residents

In a three year project, led by Dr Sam Hughes of South East Rivers Trust (SERT) with assistance from North West Kent Countryside Partnership and Dartford Borough Council, the western course was restored. Much of the dense sycamore and overgrown banks were cut back to allow sunlight to reach the channel again. The natural curves of the river were re-introduced and the deep silt slowly excavated and moved away.



In March last year, the coffer dams were finally removed and a fast natural flow of water re-introduced, leaving the clear, bubbling river that we see today – an almost unbelievable transformation!

Urban rivers will often need maintenance that would be unnecessary in the open fields where there is room for a river to change its course with cycles of erosion and deposition. In chalk streams, the river bed is often made up of gravel, but in low flows, it becomes harder for a river to clean its gravel and manage its silt.

DRiPS wishes SERT 'Happy 20th Birthday'

SERT first began work on the River Wandle in 2002.

Their activities now cover twelve river catchments.

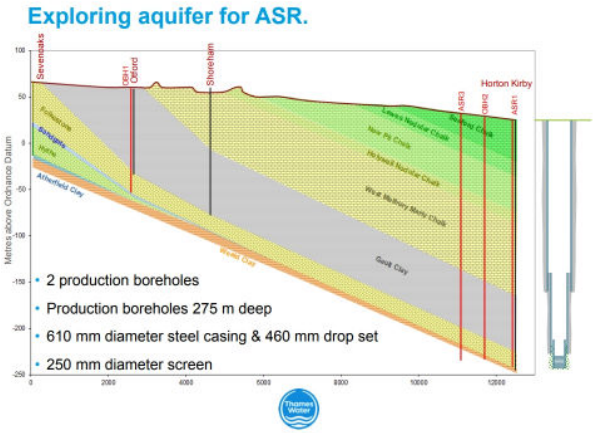
What's happening at Horton Kirby?

It's called Aquifer Storage and Recovery (ASR). It involves storing water in natural underground reservoirs – aquifers – porous rock strata hidden deep under the ground.

Beneath the chalk across which the Darent runs, there is a 70m-thick layer of impermeable clay. Under that, 250m down, is an entirely separate, deeper aquifer in the Lower Greensand. The idea is to store spare treated water there in times of plenty.

The aquifer is not connected to the river so does not influence its behaviour. Thames Water started investigating the viability of this water storage method in 2015.

The programme of recharge and storage, with some abstraction, will continue as part of the commissioning of a pipeline and water treatment works until full delivery of the ASR supply scheme in 2025. If all goes well, ASR should provide a small but significant source of water supply to the region in the future.



Q: Why is there wood in the river?
A: Because fish live in trees!



Fallen trees and logs are a natural part of a river system.

It has been said that when a tree falls, it is only half way through its lifetime.

Natural rivers are never straight. They follow local geology and meander around obstacles forming different stretches where water moves fast and slow, deep and shallow, to provide homes for different sorts of plants and wildlife, in sunshine and in shade.

Fish look out for fast flowing clean gravelly river to spawn and little fish will hide among tree roots and fallen branches. In times of low flows, it's somewhere to hide from predators.

If you look carefully, you may well find examples of fish living in trees.

Rediscovering Sundridge's historic mill pond

Sundridge Milll and its ponds once provided a serene sight for travellers on their approach to Sundridge and a visit to The Lamb. For many decades the area had become overgrown, a useful flood plain but an unloved, waterlogged wasteland of scrub and bramble.

The first mill was probably pre-Norman. In the1700s, it was a major paper mill. The paper produced there was of the finest quality and used by the Royal Mint for the large bank notes of the period. In 1901 the historic mechanism was converted to a steam laundry. The millpond was hit by a bomb in WWII and all of the old mill buildings were demolished in 1966.





Only one of the old structures is visible today - the old sluice gate. The local farmer, John Evans, has begun to rediscover the story behind this abandoned piece of land which is no longer connected to the river. There has appeared a spring which fed the laundry and it has begun to refill the old millpond. Already wildlife is returning and it is again becoming an attractive stretch of water.

WHY JOIN DRIPS?

Our rivers are the arteries of the landscape and the highways along which Nature drives the water cycle - without which life would perish.

Much of what goes on in our river networks is hard for us to see - and so are the micro-fibres, road runoff, excess fertilisers, spilt chemicals and invasive species that threaten to destroy the native ecosystem on which our river life depends.

That is why we name this little publication "The Voice of the River Darent"

We work closely with the South East Rivers Trust and NWKCP (opposite) and other local volunteer groups. With the Environment Agency and water companies we all meet together in regular Catchment Improvement Group meetings. We walk sections of the riverbed, recording what we see all the way from Westerham to Dartford.

Membership costs just £10 a year,
£20 for organisations.
See www.darent-drips.org.uk

If you are interested in helping with poster campaigns, research, the website or articles for this newsletter, or help organise meetings, please drop a line to darentdrips1985@gmail.com and we'd be happy to talk.

If you can't make our May meeting, there will be another in October with a (very short) AGM.

Stuart Merrylees, Chair

North West Kent Countryside Partnership - the NWKCP



Mark Gallant (centre) and a group of North West Kent Countryside Partnership volunteers prepare a Ranunculus (water crowfoot) transplant in the river in Westerham. It was collected in Shoreham, where it is abundant. Unfortunately, it has now disappeared from Westerham. Take a look at www.nwkcp.org if you would like to join a workparty anywhere on the Darent - tools and waders provided! Mark's email is Mark.Gallant@kent.gov.uk

Sign-up with Mark for a DEEP WORKSHOP

Darent Environmental Enhancement Programme

As part of the DEEP initiative, Mark Gallant has designed a series of citizen science workshops for anyone who wants to understand more about the ecology and management of chalk rivers such as the Darent and the Cray.

This will be a free course with two workshops on



weekday afternoons held at three different venues, throughout the valley .

Horton Kirby	4th, 20th May
Shoreham	6th, 13th May
Brasted	12th, 19th May

1. Ecology and Management of chalk streams

2. Invasive non-native species

To complement each workshop, a site-visit/practical session will be offered at a later date - venues to be confirmed.

Booking is essential

Please contact Mark.Gallant@kent.gov.uk or call him on 07740 185228

Smart Water Meters?

If the target is 120 why do most of us score 150?

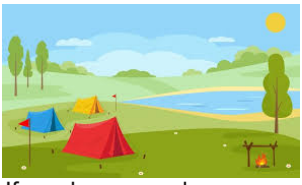
It's our personal water consumption in litres/day. The national average used to be 142 litres/day but Thames Water says it has risen to 153 in the last three years. Sadly, about 30% of this goes down the toilet.



Meters are usually out of sight. If they were really smart, shouldn't we be able to mionitor our daily water usage on our mobile phones?

The water companies already read these meters over the mobile network so why can't they send us the readings. If they want us to reduce our usage year by year, we can only do this if we can see how much we are using, day by day.

DRiPS is asking water companies to create an app and send us the data they already collect, so everyone in a family can do their bit to help. How else can we ever reach 120 litres/day?



If you have ever been camping or caravanning, you probably know you can manage on much less water. Maybe stay in the holiday mood all year?

Virtual Water?

Our total consumption of water could be 3000-4000 litres/day.

It's sometimes called our water footprint or embedded water. Much of it comes from other countries which have even less rainfall than we do.

Google for it.
It's scary.

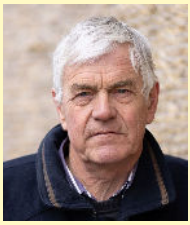
Cup of coffee: 130 litres
Pint of beer: 150 litres
Single egg: 200 litres
Steak: 3850 litres
Pair of jeans: 8000 litres



Image courtesy of SES Water campaign

DRiPS Summer Meeting

The Quadrangle Shoreham TN14 7RP
Tues 17th May 7.30pm



"The Darent Valley Farming Cluster"

A collaboration to increase local biodiversity

William Alexander of Castle Farm

The Alexander family has been farming in the Darent Valley since 1892

From 6.30pm
Visit the river at the Quadrangle with Trevor Carman

Non-members welcome
Enquiries 01959 563296

